THE THEORY OF PROTECTION AND INTERNATIONAL TRADE

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PREFACE TO THE ENGLISH EDITION

I AM glad to present to the English and American public my work, which modestly tries to bring some new contribution to the problem of protection and international exchange.

I offer this work because I think it represents a contribution towards the understanding of a leading economic problem in England and in America

This somewhat presumptuous assertion needs justification

Reading my work, one might say—and international critics have indeed sometimes said—that it is too much influenced by the situation in European agricultural countries such as Russia and Roumania, and that its conclusions would be difficult to apply to the great industrial countries, England and America

It is the purpose of this preface to defeat such criticism, and to show the advantage English and American readers may derive from the study of my theories.

The interests of Anglo-Saxon countries in the elucidation of the controversy of protection *versus* free-trade and of the whole problem of international exchange are threefold. These two great countries, which play such an important part in the fate of humanity, owe it to humanity and themselves :

(1) To concentrate upon an alarming and unfortunately unsolved scientific controversy.

(2) To adopt a definite system, free from empiricism and inexactitude, for their practical commercial and customs policy.

(3) To lay down new principles of international economic co-operation, based upon concrete reality.

Let us examine the contribution this work may bring to these three points of view

(1) It is difficult to appreciate how the criticism I have

made of the classical theory of international exchange can be denied by educated people

But it is not difficult to say—and international opinions upon my work have proved it—that this criticism raises serious doubts regarding the validity of the classical theory

It would be useless, in this preface, to recapitulate conclusions already so developed that any repetition would be tiresome, but a single aspect of these conclusions will be enough to make the classical ideas appear in a new manner

Adam Smith tries to prove that any international exchange is advantageous to both parties, and his successors, Ricardo and John Stuart Mill, merely elaborate and state precisely the distribution of " advantages " between the two exchanging countries.

Well, according to my showing, when an industrial product is exchanged for a primary, and especially an agricultural product, then, owing to the superior productivity of industry as compared with agriculture, *the product of the labour of an industrial workman is almost always exchanged for the product of the labour of several agricultural workmen*

This statement is valid both for the internal and international trade of a country.

Such a general and universal conclusion, which is verified by facts, certainly contradicts the classical theory.

If in the international exchange an industrial country sends to an agricultural country the produce of the labour of *a single* workman in order to buy from the latter the produce of the labour of *five* workmen, is the exchange profitable to both countries?

Certainly not.

This exchange is unavoidable when the produce imported by the second country cannot be produced at home, but every time that it can be produced there *by the application of the labour of less than five workmen* the exchange ceases to be an advantage for the second country, whose sole advantage would be to give up this exchange, and produce at home.

In this case, only the first country (the industrial one) has an advantage, whilst the second (the agricultural country) should avoid such an unprofitable exchange.

Now, as proved in my book, *this is the most general case in international exchange, as it is the case of the exchange between industrial and agricultural countries In this almost general case, international exchange is far from offering advantages for both countries*

So the classical theories of the liberal school of free-trade collapse in these essential points.

What may be concluded about their validity in the circumstances of practical life?

What ought we to think of the immense structure of consequences built up on these theories?

Would it not be exceedingly interesting and important for science to examine the old constructions by the help of these new ideas?

Moreover, the interpretation and comprehension of the great facts of economic and social history would be the better for such an examination and revision.

For instance, could the progress of Europe, and especially that of western industrial Europe, in the nineteenth century, and European economic domination be explained, if the international exchange between Europe and other continents had been an *equally* advantageous exchange for both parties (or even a more advantageous exchange for non-European agricultural countries than for European industrial countries, as Ricardo pretends)?

The truth is, that this exchange has been extremely favourable to industrial Europe, which has found, in industry, a means of creating the maximum exchange value with the minimum human stress, and *of managing to exchange the labour of one English workman against the labour of five, ten, and even fifty workmen of other continents*

Owing to this, *national income and rapidity in the creation of wealth* have been in England five, ten, and even fifty times greater than the same income and the same rapidity in the countries with which it trades.

In the light of this statement, the notion of economic domination assumes a precise meaning: *the economic domination of a country signifies the economic state which allows the*

produce of the labour of its workmen to be exchanged for the produce of the labour of a larger number of workmen of other countries.

In the life of nations, as in the life of individuals, wealth never comes only from one's own labour "*Make others work for you*" has always been the classical means of becoming wealthy

A rich man is one who has managed to make others work for him. In the same way, a rich people is one which has managed to make other people work for it *To speak of becoming wealthy by one's own labour is scientifically an absurdity. One becomes wealthy by organising and exploiting the work of others This is true of men as of peoples*

It is true that one might imagine two peoples, possessing the same natural resources, which by a different output of energy (the one wasting time, the other working hard) would arrive at a different state of wealth.

This is conceivable, *but these differences between two peoples isolated from the other peoples of the world would never be very important.*

The great differences in wealth between peoples derive from the exploitation of other peoples

There are two kinds of exploitation, visible and invisible. Visible exploitation has been exercised in the course of centuries, and is up to the present still exercised in a reduced measure under cover of direct political domination. This is a kind of slavery.

But this domination is not very important, especially at the present time. *It is the invisible exploitation which decides the economic position of peoples, and appears in their form of exchange and international commerce.*

Industrial peoples have understood this secret instinctively. The industrial export products allow them to make more men work for them abroad than are put to work at home to create these products.

At the time of slavery this result came through compulsion; at the present time it is obtained by the free exchange of products.

Morally and socially there is great progress; from the

economic point of view nothing is changed, except proportions, because formerly one supervisor was required for a hundred slaves, and now one industrial workman is required in order to equal the produce of the work of five, ten, and, in exceptional cases, of fifty agricultural workmen

This is how our theory and its conclusions explain phenomena which are mysteries and paradoxes according to the classical theories

Indeed, could we call the historical fact of the rapid enrichment of industrial countries compared with agricultural countries anything but a paradox, if the exchange of industrial products for agricultural products cannot assure any particular advantage or superiority to industrial countries?

On the contrary, in my view, the advantage of the international exchange exists only for industrial countries, which export industrial products, and it does not exist for agricultural countries which export agricultural products, and could in no case exist if these agricultural countries imported industrial products *which they could also produce at home*

Every time that an agricultural country buys an industrial article that it ought to produce—*even at greater cost*—itself, it loses, or to use a more precise but more commercial expression, it does bad business

This enormous contradiction between economic science and historical assertions is not surprising

Either science is wrong in its basis, or history does not tell us the truth.

Now, as history cannot lie, it is evident that science must be wrong.

It is science which asks for verification and revision, and our efforts in the present work are directed to this end.

This is the interest which for the Anglo-Saxon nations may lie in an attempt to examine economic science in the light of the facts of international exchange.

(2) Our theory of protection *is a general theory, applicable to any country, without distinction of its state of development or economic structure.*

It is true that, owing to the differences which result from variable productivity, the conclusions are all the more striking where greater differences exist between the productivities of the different branches of production

Now, the contrast of productivities, and particularly the contrast of agricultural and industrial productivities, is much greater in the agricultural countries of Europe than anywhere else Nevertheless, *this contrast and these differences of productivity exist, and will always exist, in all countries of the world, and that which is based on them will always be valid.*

Besides, in the demonstration of our theory we do not ignore the economic conditions of England, and especially of America

Almost all our examples are taken from statistics of these two countries The United States have been particularly the object of the thorough analysis which appears in paragraph 27, and elsewhere.

If, therefore, there are countries upon which our theory has been specifically based, these are England and America

First of all, the American system of protection appears in a new light.

According to us, the legitimacy of protection as regards America cannot be contested. Quite the contrary

Nevertheless, on the other hand, one cannot regard as legitimate a protection which is extended to all branches of production.

There is a great difference between this conception and our system.

In fact, we have shown that the productivity of different branches of production in England and America, as in all other countries, is exceedingly variable from one branch of production to another.

There are industries which show a very large productivity, others which represent only a very small one All removal of productive forces (man and capital) from the less productive to the more productive branches represents an increase of profit for the nation. All removal in the contrary direction represents a decrease of the same profit. The classification of industries according to their productivity gives

therefore at the same time a table of the selection of industries according to the national interest they represent.

Where superior industries cannot be maintained because certain transitory *or even permanent* conditions do not permit the realisation of an individual profit by the producer, these industries should be protected by a customs duty, which would allow them to survive.

In fact, even if these industries are not in a position to secure profit for the producer without the help of protection, *they are, even so, more useful to the nation than other industries, which can exist without that help*, because their productivity—*viz the total profit of all kinds* (*salaries, taxes, interests paid to creditors, etc*)—*is greater in the case of the former industries than in that of the latter*

In a word, the small insufficiency which represents the non-realisation of the individual profit of the capitalist does not lower the position of an industry of large productivity from its essentially high position, which is given to it by reason of its integral national worth.

That is why the whole problem of commercial politics, as viewed in England and America, requires a classification of all industries of the country from the point of view of their productivity

Once this classification is established, the selection of industries which must be protected is easy

Protection will be given only to those industries of which the productivity surpasses the average productivity of the country, and will be refused generally to those industries whose productivity falls below this average.

The industries of the latter category can disappear, if their disappearance gives rise to the removal of their productive forces (capital and workmen) to the superior industries of greater productivity It is these latter, according to our conception, which should be the objects of all care.

It is unnecessary to add that the considerations of our theory should not be taken in an absolute sense, and that secondary interests of political or social nature may modify its too rigid application.

Nevertheless, national capital interests show to advantage

with the aid of our classification based on the degree of productivity

This criterion of selection, which we introduce to science, banishes the problem of production from the reign of empirical estimation. It introduces a new element, which allows true national interests presented by industry to be "measured," apart from all particular and selfish influence.

The application of this method may lead to surprising conclusions from the standpoint of practical reality: it shows, for example, that protection of American agriculture, and even of the English cotton industry, is not, from the point of view of general interests, advantageous for the respective countries.

These conclusions, even if they do not lead to the sacrifice of these branches of production, constitute, however, valuable indications for national economics to follow for some decades and even for some centuries.

In any case, they show the statesman and the economist the *meaning* they must give to the economic evolution of their countries.

According to our conceptions, protection no more appears as an abnormal and illegitimate device of economics, but as a *normal* instrument destined to support the industries which produce wealth with the greatest possible intensity (therefore, the most valuable industries for national economy).

In contrast with what free-trade teaches us, protection does not mean the protection of the weakest elements, representing therefore the least interests for the country, but, on the contrary, it means the protection of those most capable of producing wealth in an intensive way.

As regards England's economic state, another book ought to be written, specially designed to develop all the consequences of our theory, as applied to the United Kingdom. Should our ideas be found interesting by the English reader, we will write it one day. What may already be anticipated in this direction is that the extension of the British market, even if limited to Capital, is so considerable, and the buying power of the nation so important, *that for whatever branch of*

production, the domination of the home market that could be reserved for it by protection represents an especially important advantage, which will allow it better to withstand the price reductions imposed by the competition of export markets.

The customary objection that a generalised protection would produce a general rise of prices in the internal trade of England, such as might handicap the whole production, is not applicable in the case of our theory, which recommends only a partial protection confined to certain branches of production On the other hand, a certain rise in prices, which causes necessarily a decrease in consumption, represents a necessary check during the period in which so many workmen are unemployed, and gives place to a certain levelling up as regards the conditions of production of different branches.

In fact, the protected branches, on account of the rise in price of their products, weigh a little over the other non-protected branches, which, in the measure that the latter can support the over-weight, sustains the whole national economy.

These short considerations cannot show as clearly as the arguments in our book whether our theories may be a useful contribution to the practical commercial politics of England and America. We, however, should rejoice in every opportunity of bringing forward practical hints for the solution of different problems.

(3) International economic co-operation, and especially co-operation between European countries which are trying to maintain Europe's supremacy in the world, is an active preoccupation with English and American nations.

According to us, economic co-operation should depart from the exact interpretation of universal economic facts. An erroneous conception of national wealth, and especially of the effects of international exchange, may lead to the gravest errors.

All our arguments purpose to show *that it is the nature of international exchange which is the determining factor of the wealth of nations* The example supplied by Europe on this subject is very conclusive.

In effect, if we make an economic classification of the countries of Europe, we have to place on one side *the countries exporting industrial articles and importing raw materials* England, France, Germany These are the rich countries of Europe.

On the other side we have to place *the countries whose imports consist of industrial articles and whose exports are raw materials, agricultural products in the first line*. Russia, Roumania, Yugoslavia, Bulgaria. These are the poor countries of Europe

Thus appear distinctly " the two Europes " of which Mr Delaisi speaks in his book.

These two Europes show in an approximate manner—before entering into scientific demonstrations—*that it is the structure of a country's exchange, the nature (and not the quantity) of its exports and imports, which determine its state of wealth and capacity for increase of wealth.*

Moreover, from the economic point of view, the most significant thing for all countries of the world is *the quality* of their imports and exports When a people exports the produce of the work of ten of its workmen in order to buy the produce of the work of a single foreign workman, this exchange can be only disadvantageous Now, this is the normal case in the exchange between the United States and Russia, between England and India, or between Germany and China.

In the light of these statements, can we believe in the solidity of the principle of the division of labour? Our statements alone reflect the true state of humanity at the present time.

They show the great inequality which reigns in the world, and which, according to the conception of equality, is, at the same time, an inequity.

But the economic equilibrium of the world cannot indefinitely rest upon an inequity.

This inequity is greater than another much-discussed one—namely, the plus-value of Karl Marx.

The plus-value has upset all the political life of nations. A new doctrine and idealism have developed, based exclusively on this troublesome notion of plus-value.

What has been the result? The socialist theory, which showed that in the division between capital and labour the share of capital is too large, has led to eighty years of social reforms, which render the share of the capitalist smaller and smaller and that of labour larger and larger

The final result has been a certain equilibrium, and a relative peace in the relations of capital and labour

This other inequity upon which we insist—the inequity presented by international exchange—has not had its scientific theory; it has not been taken up by science.

It is sometimes vaguely spoken of, but with so little lucidity as to have no scientific value.

The class struggle—socialism—has declined in the last two decades from its primary intensity.

This other socialism, the socialism of nations, which must have for its basis the inequity of international exchange, still retains all its asperity.

The equilibrium built upon this inequality cannot resist the attack of centuries.

Meanwhile, it is on this equilibrium that the world rests

Why will this equilibrium not endure? First of all, for an ethical reason. Nothing that is unjust can last. Further, for a hundred years there has been a tendency to destroy it.

This marked contrast, where, in a working year, we find on the one hand great, and on the other very small, production with forced inequality of exchange, is slowly tending to disappear. There is a levelling up of prices, and it will be followed by the levelling up of productivity.

On this subject we have made some very interesting observations upon American statistics they show that in the course of centuries there has been a very significant approach between the prices of raw material and those of industrial articles. During the sixty years preceding the war, agricultural products increased, and industrial articles fell in price, and in this way the former very considerable difference between them has been reduced. At the same time, *the difference between the productivity, measured in units of value, of agriculture and of industry has much diminished.*

In 1880 the productivity of industry in America was *three* times as great as that of agriculture · to-day, on account of the progress of agriculture (and in spite of the progress of industry), the two productivities approach each other, and industry is now only twice as productive as agriculture.

What is the result of this conclusion?

It is that industrial countries cannot indefinitely exchange their industrial articles with other countries on this basis—the produce of one European worker against the produce of five or ten workmen of other continents

It is that there has long been a tendency to level up productivities—that is, *a tendency to weaken the inequalities of international exchange.*

The world must therefore prepare itself to adopt a new equilibrium

In what sense?

Firstly, there will be a fatal decline in the prices of industrial articles.

Even by working and producing more the industrial workman will not be able to exchange the products of his labour against those of the agricultural workmen of other countries under conditions as favourable as in the past.

Europe is particularly menaced, not only by the possibility of a less favourable exchange, but also by the eventual inability of placing its products at all in other continents

The industrial decentralisation of the world, the industrial evolution of India and China, the industrial progress of the new countries will possibly impede Europe, in the future, from placing its products.

Happily, the study of statistics shows (although it may appear paradoxical) that *the largest importers of industrial articles are always the industrial countries.*

As a matter of fact, before the war England imported, per inhabitant, ten times as many pure industrial products as Russia, per inhabitant.

Thus, agricultural Russia, which, according to the classical theories, should have been the natural market for the industrial products of occidental Europe, presented a very poor market. It had much less interest for the exporter of

European articles than England, which imported, per inhabitant, ten times as much as the Russian peasant was able to import.

There we have a fact which enables us to hope that in the day when the Russian, Indian and Chinese peasant will become richer by the progressing industrialisation of their countries, the buying capacity of these countries will also increase correspondingly

They will then be more capable of absorbing the industrial production of Europe than they are at present, inasmuch as the civilisation which we have so well managed to introduce to countries of other continents will develop new tastes, new desires, for whose satisfaction they will make all sacrifices.

This will allow countries backward in industrial development to create new means of industrial production without endangering the economic equilibrium of the world, *but* by demanding a new adaptation of this equilibrium

For example, in China the productivity of to-day can hardly be about 250 Swiss francs per worker per annum.

Therefore, if a creation of new industries should begin in China, these new industries, even though realising the smallest possible profit, will open up a much larger productivity, and so increase the buying capacity of a part of the Chinese population

What force can restrain this evolution, even were it known to be only temporary?

And on what grounds could this evolution be hindered?

Our conclusion is that the danger run by industrial countries is not a transitory one. Profound causes are leading to a lasting economic evolution.

What the essentials are that this evolution imposes we could not outline in this preface

The chapter we devote to the politics of Geneva will clearly designate the broad lines of international co-operation, *conceived in a spirit of reality, and not contrary to the evolution of humanity.*

The conception which consists of taking the status quo *as basis, and even as aim of international economic co-operation,*

is in fact untenable, destined to be reduced to nothing by the years to come. With or without the World War, the fatal evolution of humanity towards the destruction of the inequalities of international exchange cannot be retarded. The problem of international co-operation is not how indefinitely to resist the inevitable, but how to bring about the necessary adaptations, in order that the economic evolution of humanity may proceed without shock and without disturbances.

And in this direction there is no worse enemy of humanity than man, who, in the name of unworkable theories, increases the troubles of nations and hinders their normal and beneficent evolution.

INTRODUCTION

SOCIAL facts presenting a certain uniformity in space or time can be understood only with the help of a *theory*

Sporadic and particular effects can do without one

Permanent and general facts, however, ask for a logical linking together into a theory

To demand *explanations* for particular facts and *theories* for general facts is an inborn instinct of the human spirit

Theories may precede social facts, they may be concomitant with them, or they may appear only after them.

To distinguish the rôle of ideas in the evolution of social facts requires great nicety, since the influence of an idea or an objective factor can never be identified.

Ideas, like facts, have laws which govern their evolution. Ideas proceed from ideas according to a certain determinism, just as facts proceed from facts according to a similar determinism.

But ideas and facts do not remain isolated · they exert a mutual influence Facts become the cause of ideas, ideas become the cause of facts.[1]

In this complexity it is difficult to establish whether a certain category of phenomena is due rather to ideas than to facts. It is an extremely delicate task to *consider*, at their origin, the parts played by facts and by ideas.

And yet there are evident and striking cases when, in spite of all scientific scruples, one can express an opinion without hesitation

There are cases where ideas prevail and lend their own colour to events

On the other hand, there are cases where facts develop, influenced by certain social realities, without ideas interfering as independent and active factors.

[1] GEORGE CROMPTON, *The Tariff* (Macmillan, New York, 1927), p 4: "There is no subject more fertile in suggestions than this (protection) for a study of the action and the reaction of ideas upon historical events and of historical events upon ideas"

In the first case ideas *precede* facts, in the second *they follow them.*

As an example of the first case, we have Bolshevism.

Evidently it was not the *idea* alone which destroyed Tsarism.

During a century and a half the waves of revolutionary ideas assaulted the stronghold of Petropawlovsk, and yet not one single stone was displaced

For the triumph of the revolution there had to be a deadly war, a complete social upheaval. The revolutionary victory, therefore, was not due solely to ideas But the *form* of the revolution, the *spirit* of the reconstruction, right or wrong, which followed it, was exclusively the work of idealists

The economic and social factors of Russian life have played no decisive part either in the aims of the revolution or in what has since been constructed

One may say that in the results of the revolution there is but one single reform which corresponds to a specific Russian necessity . the division of landed property. All the rest is foreign idealism, imported artificial theories, extracted from books. Certainly there ideas play the leading part. Their predominance is clear, as perhaps in no other case in history

An example of quite a contrary case, in which an important general social phenomenon is being developed without corresponding idealist support, is precisely the one which forms the subject of this book · protection.

As a social fact, protection represents one of the most notable phenomena of modern life.

It represents, as may be seen, not only an enduring and constant, but also a very general fact.

This permanence and generality are of themselves sufficient to claim and justify a *theoretical* construction of the idea of protection.[1]

The permanent and general factors of modern life, which

[1] WILHELM BICKEL (*Die ökonomische-Begründung der Freihandelspolitik* (Zurich, 1926) p 197) · "Scientifically, we may rather notice a return towards the free-trade conception, which is in direct opposition to the exaggerated protection which is so general nowadays."

are the cause of *the protectionist phenomenon,* should be discovered and brought to light. All these factors should be logically connected with the general phenomenon and its variations For I know nothing more absurd and humiliating for the human spirit than the opinion of certain authors, according to whom *free-trade, the antithesis of protection, might be, " correct in theory, but not in practice "*

Is it really admissible that a theory is correct when it does not cover the facts it wishes to justify or to explain?

Then, what is a theory?

Merely a scholar's *jeu d'esprit* ?

If there is a *general* protectionist PHENOMENON, there must be A GENERAL THEORY of *protection*

But the logical necessity of a theory is accentuated by the fact that protection is not a social fact almost independent of the will of men—as capitalism, for instance—but a *voluntary* act, the object of conscious *State* laws

Now, at any rate in the world of to-day, the State cannot devise a measure without justifying it. Protection has the double disadvantage of demanding sacrifices (at least apparent ones), and at the same time of appearing to the mind as something not inevitably necessary

Other social institutions demand sacrifices, for instance, the army But these institutions impose themselves on nations by elementary instinct and by tradition

In order *to deny* the importance of an army for a nation, you need arguments; *to confirm* its importance, you need none.

Protection is a different thing altogether It is a State regulation, bearing an artificial, programmatic character

The plain common sense of the masses is against protection and in favour of free-trade.

Everyone's first inclination is to run after the benefits of cheapness, as something within the natural order of things Protection appears to be an invention of the devil.

That is why protection needs justification, defence, *excuse*; that is why, apart from the permanency and generality of the protectionist phenomenon, its character as a State regulation demands a *theoretical* justification.

We are entitled to expect that such a theory exists

We may presume that it will deal with the phenomenon of production in general, and that it will explain why and how, in all countries and at any given moment, it is advantageous to protect certain branches of national production by protective taxes or by subsidies

Well, to the great surprise of unforestalled readers, such a theory *does not exist*

Modern protectionists generally call List their precursor.

But, as we shall see later on, List never advocated the adoption of permanent protection In fact, List *even contested* protection as a *permanent* law for the encouragement of national production

His system adopts the *provisional* (educational) protection only *for industries* and *for certain countries* which are passing through a certain phase of their economic and social evolution

List's system, far from strengthening the *general principle* of protection, weakens it

He presents protection as the exception, and *grants the character of general validity* to the free-trade system.

With the lack of harmony between the vitality of the protectionist phenomenon [1] and its insufficient theoretical basis, the question definitely presents itself :

Either protection is not justifiable, and the whole world is then the victim of a mystification unparalleled in history, or it is justifiable (all persistent and general phenomena are assumed to be justifiable), and then it must be put on a theoretical basis, corresponding to its importance.

In the first case, it must be destroyed as an economic system; in the second, it must be strengthened and systematised.

This systematisation is indispensable.

[1] Fontana Russo, *Traité de politique commerciale* (Paris, Giard, 1908), p 186 "Whilst in the political and economical world everything has been transformed, protection alone maintains all its authority, and is still practised on a large scale"

Not having a scientific theory, protection exists and develops itself empirically and arbitrarily *without a guiding principle.*

Its force is not reason, but instinct The people are aware, by instinct, that it would be dangerous to expose the whole of the national production to the possibility of limitless foreign competition, statesmen have the same instinct of the risk they would let the nation run in giving up protection.

Besides the instinct of those who have no selfish interests in it, there is the selfishness of the directly interested minority, *i e* the industrial magnates of every country.

A theory of protection would also have a considerable practical use.

It would permit the application of protection, *according to certain scientific criteria,* fixing objective rules without arbitrary and selfish suggestions

It would give us precise indications as to the branches of production which we ought *and ought not* to protect.

Finally, it would enable us to establish the degree of protection which should be granted to every article in commerce.

In this book we intend to construct a new theory of protection, which will have a general character. A few words are necessary to explain our methods.

We shall plunge at once into the demonstration, without at first criticising other protectionist or free-trade doctrines A critical survey of the various doctrines and schools will follow

We are obliged to proceed in this unusual way, because our theory is based on a personal conception of the structure of national production.

From this conception to the theory of protection there is only one step.

When once this conception and theory have been developed, it will be easy to pass to a critical examination of other doctrines

It would not be the same thing, if we had first to criticise

these doctrines—without having developed our conceptions —and had to make use of partial anticipations, based on our theory, for this criticism

A method which consists of gradually developing one's ideas, solely in contrast with those of others, easily becomes tedious and rids the statements of unity, leading to repetition.

That is why we shall enter *ex abrupto* into our subject The reader is now, at least, forewarned

We are quite aware that our purpose is not very modest, but although the habit of apologising to the reader has been out of fashion for a long time, our case is so serious that we have to make use of this convention

Our attempt is excessively audacious. Its only excuse is that it is *an attempt*

Audacious—first because we criticise other protectionist systems, which we consider completely insufficient, at least as far as modern protection is concerned

Again, because of our object, which is to construct a *general* theory of protection.

And lastly, because we have made up our minds to swim against the stream and to uphold the principle of protection, against which, at Geneva and elsewhere, it is fashionable to use one's biggest guns.

To accomplish a great task without the help of those who support the same cause, and to go against the current of present day ideas, is an undertaking beyond the most powerful resources.

We know from the beginning that we shall not fulfil this task alone.

We shall be happy, however, if we can reach the first stage, which consists in the raising of doubts.

Doubt is the beginning of wisdom.

When people begin to doubt the value of the actual theory of the division of international labour and of the recommendations of the free-traders of Geneva, the rest will follow easily.

Our work is far from being complete. It develops a theory, but does not deduce all the implied conclusions.

It fails especially to make a complete revision of the old protectionist and free-trade arguments in the light of our theory

The aim of this book is, mainly, to introduce to science a new point of view which we believe will prove to be very fruitful in results

If our theory and our point of view are considered to be legitimate, perhaps others, more qualified than we, may finish our task, perpetuating our principles, and planting them like young trees along the path of human knowledge.

MIHAIL MANOILESCO

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PART I

THE FACTS

CHAPTER I

THEORY AND PRACTICE OF PROTECTION

(1) In the introduction we made a very strong assertion concerning the insufficiency of protectionist theories.

We think we can rely upon the almost unanimous opinion of all authors as regards our assertion.

Before examining the most categorical opinions in economic writings, we must again emphasise the question of the existence or non-existence of a *general* theory of protection.

For the protectionist *phenomenon* has a definitely general character.

In spite of differences in climate and natural conditions, of varieties of wealth, and especially of progress in industrial evolution, protection is predominant in all countries

It is a *general* phenomenon, whose vitality appears to be due to general causes, independent of space and period of time Does not every country live in a different period?

Hence to enable the theory to cover the whole protectionist phenomenon, its general character must first be examined.

(2) Let us begin with the clearest and most categorical theory, that of Messrs Ch. Gide and Ch. Rist,[1] who, in speaking of F. List, ask whether modern protectionists can claim his support, and reply that it is difficult to say so, because of the *absence of any systematic work embodying their ideas.*

That is a very conclusive assertion on the part of two unquestionable authorities. It is the melancholy truth: *the most important economic doctrine for us to settle through the medium of the State has not yet received its logical, general, and theoretical justification.*

[1] CHARLES GIDE and CHARLES RIST, *Histoire des Doctrines économiques* (Sirey, Paris, 1920)

Economic science has not yet discovered either the exact interpretation of the protectionist doctrine or its inward logic, and has not been able to give us, for its practical uses, a *standard* founded on fixed and objective criteria

Moreover, the statements made by Gide and Rist are not new.

In 1886, Sumner,[1] the famous American economist, wrote :

" On all these questions (of protection duties) the economist can throw no light He has no clear method for studying them In this respect, he cannot deduce any principle or state any law "

At the same time, the English professor, Bastable,[2] remarked that to declare oneself for unlimited free-trade is a dangerous mistake, " because it then leaves the way open for a protection, *without a guiding principle* "

Protection, therefore, seems bereft of any theoretical basis And all these opinions are later than those of List and Carey [3]

[1] WILLIAM GRAHAM SUMNER, *Le protectionnisme* (Paris, Guillaumin, 1886,) p 29

[2] C BASTABLE, *La théorie du commerce international* (Paris, Giard, 1900), p xxii

[3] We quote from different modern authors

PATTEN, *Les fondements économiques de la protection* (Giard, Paris, 1899), Chapter I, p 2 " Doubtless, all these arguments have managed to possess great force *at certain periods* in the development of nations, but they are not sufficient in themselves to serve as a basis for an economic theory "

JOSEF GRUNTZEL, " Zur Theorie des Schutzzolles " (*Weltwirtschaftliche Archiv*, August 15, 1918) " Protection is practised almost everywhere, but in theory remains a stepchild "

F W TAUSSIG, *Principles of Economics* (New York, Macmillan, 1925) " Notwithstanding the mass of literature on free-trade and protection, no book covers the controversy satisfactorily "

FRANCIS FRANCIS, *The Free-trade Fall* (London, Murray, 1926), p. 68 " If we had been able to find *a scientific form of protection*, we should have been able to keep our pre-eminent place in the world "

WILHELM BICKEL (*op cit*), last chapter, p 196. " The attempts to create a protectionist policy remain at a *lamentably low* level "

And lastly, this very remarkable quotation

FABIAN VON KOCH, *On the Theories of Free-trade and Protection* (London, 1922), p 3 · " *In reality there exists to-day no true theory of protection corresponding to the theory of international trade presented by free traders* "

In contrast to the opinions upon the small contributions of modern economists to the theory of protection, it is interesting to note the praise that some authors give to the mercantilists For example —

LAURENT DECHESNE, *Economie mondiale et protectionnisme* (Liège), 1927) " *Mercantilism really seems to be a doctrine particularly well adapted to present necessities, and it must be recognised that it was employed with great success, as Adam Smith himself acknowledges, in the case of Cromwell's*

(3) Thus the scepticism of modern scholars and their reluctance to declare themselves in favour of free-trade or protection on general grounds are easily explained Without any theoretical hypothesis, one is led to think there may be no general problem of free-trade or protection to solve [1]

Conrad writes [2] "Neither the tendency to protect national labour, nor that to divide international work, can claim exclusive rights; neither one principle nor the other can be established as a principle of general validity (*allgemeiner massgebender Grundsatz*)"

And, further on, with clear concision.

"The question of protection or of free-trade is not a question of *principle*, but of *practice*"

Like Conrad, Schmoller expressed himself, at a meeting of the Verein fur Sozialpolitik in 1879, as follows·

"For me, protection and free-trade are not questions of principle, but subordinate means of *State therapeutics and economics*"

According to Bickel, it is "the principle of having no principle"

The great prestige of the free-trade theories, and the weakness of the protectionist thesis drive one to the conclusion [3] that a consideration of free-trade arguments, "whose force of conviction has impressed the most eminent economists, renders the practicability of protection *the greatest curiosity* (die groesste Merkwurdigkeit) *of modern times.*"

(4) That, in one sentence, is the central thought which induced us to write this book

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Navigation Act This success and this continuity are in contrast to the transformations of neo-mercantilism in our democratic societies, which, fluctuating as it does at the mercy of private interests and the electoral masses, is often only a policy of momentary expedients, leaving no place for general and lasting interests" And the conclusion (p 72), *"Perhaps it is the most scientific of all systems of protection owing to its aims, its methods and its theories"*

[1] ROBERTSON, *The Political Economy of Free-trade* (London, King, 1928), p 43 "Broadly speaking, protection was practice before it professes to figure as theory free-trade, in the sense of free imports, was theory before it became practice"

[2] *Grundriss der Politischen Oekonomie* (Jena, Fischer, 1923), Vol II, p 347

[3] ROPKE, *Schutzsystem in Handworterbuch der Staatswissenschaften*

It appeared to us to be the greatest paradox of science and social life that so important a phenomenon as protection could be developed without the approval and control of science, indeed in spite of science and *contrary* to science.

And, strange to say, this paradox exists at a time when the least of social facts is carefully and minutely studied, even where, in contrast with the protectionist phenomenon, no practical object is in view, even where the power of influencing its evolution in one way or another entirely escapes the human will.

And, at the same time, a doctrine, the existence and regulation of which depend purely upon the will of men and their institutions, is left outside the influence and control of science, which, *in the strictly economic sense,* can give no help towards its comprehension and its methodical employment.

Both these controversies, free-trade and protection, are now out of fashion; in order to deal with them to-day, one must have the courage to be behind the times. They are no longer discussed

But an abandonment of the discussion does not imply the attainment of scientific results. Protection is only practised, not proved One merely proves the contrary. At Geneva and elsewhere protection is contested; meanwhile it is practised in all countries.

This is the general, the universal inconsistency.

(5) The non-existence of a general theory of protection is not only a "philosophical malady" from which certain restless minds suffer It exists as a gap of great practical range.

In the absence of a theory and method of protection, customs tariffs are formed, and subsidies and other protectionist advantages are distributed, in an arbitrary manner.

(1) It is not known *when protection should begin and when it ought to stop.* According to the doctrine of List, it should be withdrawn as soon as the "youth" of an industry has passed. But, as all authors have remarked, industries never confess that their youth has passed. Like the ladies, industries always want to be thought young!

So protection is not withdrawn, and the industries never consider themselves able to "stand on their own feet."

In 1886, Sumner wrote [1] "I do not know a single case where this hope has been fulfilled, although we have followed this course for almost a century."

(ii) Not only has the duration of protection not been fixed by actual theories, but also *the degree of protection.*

The words "disproportionate" and "exaggerated," readily applied to certain protective taxes, are frequently met with in the arguments of free-traders.

The League of Nations, whose politics we shall fully consider later, is continually fighting against "exaggerated" protective taxes But when is a tax no longer "reasonable," and when does it become "exaggerated"?

That is what the protectionist arguments of to-day cannot tell us, for want of a scientific theory.

(iii) Finally, the scientific data of to-day do not even tell us *to which branches of production protection should be granted, and which branches should be left* to struggle with open *world* competition.

This is the most delicate point of the practical problem.

(6) In the absence of any objective criterion, it is the intense struggle of private interests which must decide the destiny of different branches of production.

The most conclusive example is given by the United States, the country of protection *par excellence*

Sumner [2] says, in this connection: "Congress has had neither method nor object in its tariff legislation," and farther on: "The history of tariff legislation in the United States gives an idea of protectionist doctrine which is half grotesque and half revolting."

Nothing could be more severe. The same statement is made in other countries.

We quote from Dechesne,[3] who, in his turn, quotes Gide for France and Helfferich for Germany. "However great may be the care of a Government for the general welfare or for its own political prestige, it cannot withstand the pressure of private interests, which drive the population in different

[1] *Op cit.* [2] *Op cit*, p 46 [3] *Op cit*, p. 98

directions. The line the Government will take will be the resultant of these manifold factors With greater reason, *economics, as understood until now, has played but a small part in the orientation of commercial politics. Impartial economists must recognise this*" Gide says "*Customs tariffs are never the application of an economic doctrine* They are the result of a mutual agreement between powerful interests, which have often nothing to do with the general interest; political, financial and electoral considerations may also play a preponderant part in their establishment." [1]

In Germany, Helfferich draws the same conclusion: "*Private interests have always played the principal part in the practice of commercial politics*, and arguments based on general interests have frequently been used by experts and theorists to hide their real motives" It is, declares an American professor (Griffin). "An example of that very important truth that the motives which govern the actions of men are often very different from the reasons by which they justify them." Further on, Dechesne quotes Meredith: "Tariffs are the results of rival interests, they are not made by scientific protectionists." [2]

"The establishment of a tariff is, in fact, only an assault in which everyone tries to grab the most he can for himself, instead of proceeding, as a theory of protection should, from the careful study by the State of the necessities of every industry." [3]

It would be useless to continue. The same complaint comes from all countries. The lower the general morality of a country, the more the danger of partiality and corruption menaces the codification of tariffs.

The fault lies not only with morality. *It lies largely with economic science*, which has not succeeded in giving tariff

[1] YVES GUYOT, *La Comédie protectionniste* (Paris, 1903), p 426 "An industry is protected, not according to its importance, but according to the influence of its directors"

[2] JOHN A HOBSON, *International Trade* (London, Methuen, 1904), p 162 · "In 'scientific' Germany and 'theoretical' France there is as little consideration for principles in the construction of tariffs as in the United States"

[3] HENRY GEORGE, *Protection ou libre-échange* (Paris, Guillaumin, 1888), Chapter VIII, p 121

problems *a standard*, based on exact and measurable economic criteria, quite apart from the subjective ideas of men.

When we know exactly what, for the whole of a country, is the *precise* and direct advantage resulting from a protective regulation favouring one branch of production; when it is possible *to measure* this advantage, as well as the inconvenience that would be caused by relinquishing that branch of production for want of protection, then only will it be possible to determine First, which branches of production ought to be protected, secondly, on what scale protection ought to be exercised, thirdly, how long it ought to last

Customs tariffs then only will no longer be the result of various capitalist and political influences, and the inconsistencies, the inadequacies and the true exaggerations of actual tariffs will be discovered.

The whole tariff construction will be examined, corrected, and, as everything that derives from a common principle has something in it of æsthetics, will be embellished.

Tariffs will be the result of the adoption of a standard, of a principle and of rules, established, once and for all, by economic science

Science will replace empiricism, and general interests, clearly conceived and defined, will replace the disorder of private interests.

CHAPTER II

CONCEPTION OF PRODUCTIVITY AND NATIONAL PROFIT

(8) The greatest errors of political economy are due to the fact that the importance of the *quality* of labour is not recognised.

"*Skilled*" and "*unskilled*" labour are much spoken of; these words have become almost international.

But, with rare exceptions,[1] when discussing exchange problems, and especially international exchange, the *decisive* part played by the quality of work is often overlooked.

Now, the introduction of the notion of quality or, better, *productivity* (which we are going to define), enables us to put the phenomena of production and exchange in a suitable light and to prove clearly by many examples the errors of certain conclusions upon international exchange, conclusions up to now irrefutable

(9) But first, how may the productivity of any one branch of production be estimated?[2]

The question covers two points:

(*a*) To establish in what real production consists[3] for a certain unit of production (manufacture or agri-

[1] JOHN HECHT, *La vraie richesse des nations* (Paris, Giard, 1925), insists very much upon the difference between these two qualities of work, but he does not realise that the difference is not so much due to the skill of the respective workmen as to the medium in which they work and the machines they use (*therefore a functional difference*)

[2] In the great "Inquiry into Production," published by The League of Nations (B I T) in 1925, a distinction is made between "the subjective output of the workman, relating to the workman himself," and his "objective output, as far as it is influenced by other elements—namely, by conditions exterior to production"

Of course, in what follows we deal only with the objective output, that is to say, with the *synthetic* results of the workman's efforts, with all the plant and organisation that surrounds him

[3] At the International Conference of Geneva, Mr Nelculcea (Roumania) remarked

"We must first define properly what we estimate and measure Then an international unit of measure, the same for all countries, must be chosen. The measure chosen must conform to the rules of international methodology"

culture) or for all the units composing a branch of production

(*b*) To determine the element to which real production must be referred in order to comprehend *productivity*.

(10) Concerning the first point, we shall naturally not consider the gross value of production of any enterprise as the real production. Gross production is inconclusive both for industry and for agriculture.

In the gross value of industrial production there are other values, not created by the industry itself, which are incorporated in the final product.

It is only right to subtract from the gross value of industrial production [1] all that may represent a value existing before the industrial operation

What are these pre-existing values? [2]

(1) First, raw materials. They must be calculated at their cost price, including transport charges to the factory.

It is evident that these raw materials have been the object of some productive labour, agricultural, extractive, or even industrial (if they are semi-manufactured products).

This labour must be examined separately.

The industry which employs these raw materials does not take into account the productivity of the labour used in gaining these materials.

It is true that if certain industrial enterprises did not

[1] In estimating the gross value of production, especially for purposes of international comparison, the amount of the customs duty, *i e* the surcharge on protected merchandise, must be deducted (if not all, at least a part), so that the international price only is considered It is only with ordinary prices, less the cost of transport, that international comparison can be made This is important, as the objection might be raised that a home establishment really inferior to a foreign one cannot represent a *real* but merely an *apparent* productivity due to the exaggerated rise of home prices consequent upon customs duties

Evidently if such productivity were only apparent, our theory would go by the board, but we gave as a first element in the calculation of productivity the international price of goods, and of course it must be understood that surcharges, artificially created by customs duties, are not included in this value

[2] For the analysis of these factors, see the method used by the American statistics of industry *Biennial Census of Manufactures* (Washington, 1928), and the English statistics *Further Factors in Industrial and Commercial Efficiency* (London, Stationery Office, 1928)

exist in a country, the raw material which forms the base of their production would not be produced, it is always "an asset" of these industries to have created the value of the raw material they employ.

Such is the case of the glass industry, where the value of the sand used is due to the existence of this industry Were it not, sand would have hardly any commercial value, since it cannot be carried into other countries as an international merchandise

However, in order to have a uniform and precise criterion, it is also necessary in this case to distinguish between the operation of extraction and that of the separation of the raw material, *so as to avoid including anything that enters the factory in the real value created by industry.*

The net production is represented only by the difference which exists between the value that *enters a factory* and that which *emerges from it.*

(ii) The second pre-existing value which enters into product is *fuel*

Fuel may be a source of heat required for the manufacturing process, or it may be a source of power

In the second case, if, instead of producing motive power itself, a factory buys it in the form of electric current, then *the price* of the current must be deducted from the gross production

(iii) The third pre-existing value is in the machinery used by industry

The number of machines and tools used in some factories is very considerable. Unfortunately, whilst some statistics (namely those of the United States) take into consideration raw materials and fuel, they neglect the third element.

(iv) A pre-existing value which can no longer be neglected is the expenses for other material (light, heat, water), and for sundry services (petty transport, unloadings, etc) performed by *agents other than the employees of the factory.*

(v) Finally, it is important to consider two other pre-existing values, which are *the maintenance* of factories and *the depreciation of their plant*

The annual maintenance charges must always be deducted

from the gross production, since they represent an operation indispensable to the very existence of the factory Sometimes they are included in statistics, in the amount spent for raw materials

(vi) *Depreciation of plant* is a more important item, also to be subtracted from the gross production.

Indeed, a factory is not, in itself, an utility, like a house. Its value comes from its production.

Logically, therefore, the value of the factory ought to be deducted from the gross value of the production during the whole of its existence If we would confine ourselves to gross annual production, an amount representing the annual depreciation of the factory must be deducted [1]

[1] American statistics, which cannot be sufficiently praised as one of the masterpieces of modern civilisation, give the net production of each branch of industry, in dollars

They term this net production " the value added by industry," and they are perfectly right

But, amongst other things, the depreciation of the value of investments must be deducted from the net production

Indeed, to build a factory, with all its plant and all its stock of tools, is a very distinct operation from that of ordinary manufacture

This distinct operation has nothing to do with the ordinary production of the factory, therefore the value of the factory and its plant should be deducted from the value of the gross production realised during all the time of its functioning, just as the value of the raw material and of the fuel employed in manufacture is deducted

It is only natural to subtract from the gross value of production everything that represents expenses for the realisation of such production, therefore, the same must be done with the cost of the factory itself

However, statistics showing net production (the value added by industry) do not take into consideration the annual fraction of the value of the factory that has to be deducted from the value of the annual production

We therefore propose to examine what is the influence of this error (*a*) on *the absolute value* of net production, and (*b*) on the *classification* of different industries, according to their degree of *productivity*

Generally, for a factory, the depreciation does not exceed 5% for the buildings and 12% for the plant—that is, at the most, 7 to 8% for the whole

Admitting that all the invested capital included in the statistics should be depreciated (it is not so, seeing that invested capital includes land, etc , which does not have to be replaced), it follows that from the net production given by American statistics 7% of the value of capital must be deducted

What does this correction represent ?

Let us consider net production, as compared with capital In 1849, in America, net production was 0 86 of the value of capital, *i e* , 0 86 *C*

If from this production we deduct the depreciation, which is, at the maximum, 0 07 *C*, there remains 0 79 *C*

The error made—in not deducting the depreciation of capital—in the net production is about 8%

The error is not large, although we may have much exaggerated the depreciation in considering it as 7% of the capital

It is true that the error becomes more appreciable when the net pro-

It is rather a delicate matter to calculate this depreciation exactly, as the different parts of an industrial installation depreciate at different rates

Buildings depreciate generally in from twenty to fifty years, when they are entirely written off, machines in from

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duction is smaller in relation to the capital For instance, in America, in 1914, the net production was represented by 0 43 C

If from that production we subtract the depreciation of 0 07 C, there remains 0 36 C

The error made in not deducting the depreciation from the net production is about 16%

The important thing is that *this error should not influence the classification of the different industries, according to their productivity*

Indeed, as the various corrections do not exceed 7%, and even 10%, they cannot have any serious influence

Taking our example again, if in the first industry the net production represents 0·86 C, and in the second it represents 0·43 C', then the respective productivities per workman, are —

$$\frac{0\ 86\ C}{T} \text{ and } \frac{0\ 43\ C'}{T'}.$$

In the concrete case from the American statistics these two productivities are $485 and $1400 per workman

Comparing the productivities, we get the ratios

$$\frac{0\ 86\ C}{0\ 43\ C'}\frac{T'}{T} = 2\frac{C}{C'}\frac{T'}{T}.$$

If, instead of taking the net production figures as we find them in statistics, we correct them by deducting the depreciation of the capital, the respective productivities of the two industries considered are

$$q = \frac{0\ 79\ C}{T} \text{ and } q' = \frac{0\ 36\ C'}{T'}$$

or, in concrete figures, $445 and $1170

Comparing the productivities, we get the ratios

$$\frac{q}{q'} = \frac{0\ 79}{0\ 36}\frac{CT'}{C'T} = 2\ 20\ \frac{CT'}{C'T},$$

therefore, a ratio greater than that we had just now of 10% The conclusion is, that by not making the correction, in order to be nearer reality, the ratio of the productivities is not very much changed from that given by statistics, even in such an extreme case as given in our example

Moreover, the result of the correction is an attenuation of the difference, when $\frac{q}{q'} < 1$ (as in our case), and an exaggeration of the difference, when $\frac{q}{q'} > 1$

One thing more must be said as to the correction of figures for the productivity of agriculture

We do not know whether American statistics deduct from the gross production of agriculture the value represented by the annual wear of the agriculture machines, in order to establish the net production. If not, it must be done

The value of agricultural machines in U S A , in 1912, was $1368 million.

The value of the net production of agriculture, was, in 1910, $1265 million

If agricultural machines are totally depreciated in ten years, nearly $130 million ought to be deducted from the net production, which represents a correction of about 10%

eight to twenty years, and in special cases, such as delicate machines or machinery subject to depreciation on account of new inventions, in an even shorter space of time.[1]

(11) Deducting the five aforesaid factors from the gross value of the industrial production, the remainder represents the *net* production of the concern.[2]

[1] The actual rate of depreciation calculated by industries is

2 to 5% for buildings,
5 to 12% for power producing plant,
4 to 12% for special plant of each industry

Some important industries, such as weaving mills and paper factories, benefit from a smaller real rate of depreciation varying from 4 to 8%. (See JOSEPH REISER, *L'organisation du contrôle et la technique des vérifications comptables*.)

The dwellings of the employees and workmen of a factory are not taken into account, these dwellings representing direct utilities and not means of production

[2] We should like to emphasise that no confusion must be made between *plus-value*, *net produce* and *net profit*

According to its size, net produce is more than plus-value, and plus-value is more than net profit. Net produce, or, as we have called it, net production, is, for each productive operation, the difference between the value of the gross produce and the values of the pre-existing materials embodied in the gross produce.

Net produce or net production must first be examined from the social and external point of view. What does this mean?

Examining a working industry, we may observe that at a certain moment its produce, owing to the general equilibrium of world prices, represents a certain exchange value. This exchange value is not entirely dependent on the conditions of *home production*. We must not try so to define it and to establish it by adding together the different items which form the cost price. All these items give the effect of a distribution of factors contributing to production, but this alone never determines the final exchange value of the gross produce.

The same may be said about pre-existing, embodied values—namely, raw materials and fuel: these values are also determined by the complexity of factors which establishes the equilibrium of prices.

Between the "roof," determined by the exchange value of gross produce, and the "floor," determined by the exterior factors of the exchange value of the pre-existing, embodied materials, there remains a space occupied by the different factors which contribute to the process of production, and this is a reflex, or passive result, of the active factors which determine prices.

It demands a restriction of all profits which are the values of services in the process of production, such as wages, interest, dividends, taxes: so that their total value shall not exceed the mentioned difference. If we pass from the external to the internal aspect (which is rather an aspect of the division of net production), we see that it is made up of:—

(*a*) Wages of workmen
(*b*) Remuneration of managing staff
(*c*) Interest on borrowed capital.
(*d*) Taxes paid to the State
(*e*) Insurance for risks
(*f*) Depreciation of the value of tools
(*g*) Dividends on invested capital.

One might remark that what remains after this deduction includes only some elements of the balance-sheet of an enterprise The workmen's and employees' salaries, the various earnings of the capital,[1] interest on borrowed capital, insurance and taxes

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The total of these elements represents the *net production*, from the internal point of view We must emphasise that this is only a way of considering net production and not its definition The definition is the one which we have given above namely, the difference between the exchange value of the produce and the exchange value of the pre-existing embodied materials

If net produce is what we have duly defined, then what is plus-value?

Plus-value represents the whole of the enumerated elements, minus the wages of the workmen We do not think it necessary to mention that Marxism is a consequence of the observation of capital that the workmen's wages represent but a fraction of the net produce (the total of the points from *a* to *g*) and that the realisation of this only shows the necessity of reducing the other items, especially the remuneration of the managing staff, the interest on borrowed capital and the profit of the manufacturer, so that wages should be as large as possible, and their sum total be the same as the net production

Therefore, plus-value represents the net production, minus the workmen's wages this is far from being the same thing as net production

And what is net profit? Net profit is only one of the items enumerated above—namely, the dividends received on the manufacturer's capital or the profit of the contractor

Is it necessary to say that net profit cannot be taken for plus-value or net produce?

Nevertheless it is very interesting to notice that in Table H (27), regarding American industry, we have given also a means of appreciating plus-value We have estimated, not only the net produce realised by the workman (productivity), but also the net production realised by a workman, minus his wages In this way we see that the plus-value represented by every workman is greater than his average wage, as the figures in the expression $\frac{f-d}{a}$ are greater than those in the expression $\frac{d}{a}$

[1] To reduce net produce only to the value of wages, would be a big mistake The earnings of capital are of large proportion in the capitalist system

According to WOYTINSKY, *Die Welt in Zahlen* (pp 228–31), the national income of the U S A amounted to 30,529 millions of dollars in 1910

Wages represented 46 9% of this sum, the earnings of capital and rents 25 6%, and business incomes 27 5%

At first sight it would appear more simple to calculate net production by other means, avoiding all the aforesaid deductions, merely adding up, from the balance-sheet of the undertaking, the above-mentioned items

But this simple method would not be *exact*, and would not give us a correct idea regarding the value of the net annual production

In fact, the profits indicated by industrial enterprises do not correspond to real profits, even *if no attempt to evade taxes has influenced the balance sheets*

It is sufficient that the annual depreciation of the plant should not be the same as its real depreciation, to diminish or artificially increase profits

For example, some industrial enterprises effect a hasty writing off on the installation value, and after some years value their plant—which is still in perfect condition—at a shilling or a dollar in their balance sheets.

(12) As regards agricultural enterprises, the method of calculation of the net production is about the same.

(i) There are also raw materials, in which seed is included.

(ii) Fuel need only be considered where mechanical power is used.

(iii) Tools are important and their wear must not be overlooked in the calculation

(iv) Maintenance is considered only for machinery and plant for purely agricultural purposes, as the dwellings of agricultural workers represent a utility in themselves, and are not only a means of production

(v) Depreciation will only be taken into consideration in connection with such plant as may represent means of production.

(13) The stress laid upon the exact determination of *net production* is due to the fact that net production represents the gain to a nation from any branch of production whatsoever.

This notion of national gain is highly important.[1] It is an obvious antithesis to the idea of *individual profit*

In the production of an article, national profit is repre-

For these enterprises real profits are artificially diminished as long as this hasty method of writing off lasts, and artificially increased when there is no more writing off of the value of the plant

Inexactitude as regards profits derives also from interest charges paid on the debts of an enterprise and the calculation of interest received on investments

In point of fact, the balance-sheets of an enterprise must reflect both these influences, which have nothing to do with the real production of a given year, as the interest paid or received expresses the development of the enterprise *before* the year which forms the object of investigation

This is why it would be neither feasible nor exact to establish the net production by adding to the wages the value of profits, taxes and interest according to the balance-sheets, and why we are obliged to deduce the net from the gross production by means of five subtractions

Nevertheless, over a long period—say twenty years—one might reach greater accuracy by adding all the wages and salaries paid during that time to every kind of profit made by the enterprise, as, over a longer interval, the total value written off corresponds better to the real depreciation in the value of the installation

[1] HECHT, *op cit*, p 333 "The lack of influence of the protectionists is due to their incapacity of measuring the *national* value of industries

sented by all the *new values* produced by any industry, outside of raw materials, fuel, etc , used by it

The advantage to the nation from this production is larger in proportion to the greater value created by the productive forces in the particular industry.

This greater or smaller national gain will be realised whatever are the conditions of production

The importance of national gain is proportional to the net production created by an industry

Now, it may happen that, in spite of a great capacity of production, consequently a considerable national gain, the production of some goods in a country is lacking in certain conditions, so that the price of these goods produced in this country is higher than the price of the same goods produced abroad. These goods therefore have to be produced at a loss

Obviously the first loss will be the manufacturer's *profit.*

If on account of the free-trade system, this profit does not exist, production will cease

Now, if there is no individual profit, must we believe that there is no national profit either?

Certainly not.

National profit, which represents a considerable fraction in the gross value of a produce, persists, even if the margin of individual profit (which, however, is indispensable for the continuation of the production) does not exist.

It is true that the disappearance of individual profit is a sign of inferiority in the home production compared to the foreign production. *But it is not a decisive indication as regards the interests of the nation. It may happen—and it does happen in a number of cases which our theory will reveal more precisely—that, even in the case of loss of individual profit, whatever the industry has produced of new value is sufficiently important to create a very considerable national gain, measured by the "productivity" of the goods, as we shall define it.*

Therefore, to believe that the only criterion for measuring the national gain of a production is the existence and the importance

of the individual gain of the capitalist, would be the greatest mistake [1]

[1] We do not affirm that national income is created in any branch of production by individual profits and by salaries, wages, taxes, etc —in short, by the profit of labour, capital, and the State Why, then, is the national gain considerable even where there is no individual profit and the industry produces at a loss? It must be left to time to prove the correctness of our ideas

There is, however, an important and undeniable difference between individual and national profit

We have never contended that there can be a national gain when individual profit ceases We have shown something else—namely, that in our capitalist organisation the benefit of the capitalist, even the minimum benefit, represents a *sine qua non* for the inception and continuance of any enterprise Were this benefit to disappear, the enterprise could not go on, for this reason it is the just purpose of protection to render possible a capitalist benefit

But, as we have fully insisted, there is no connection between the growth of national gain and the individual profit of capital For example, in a factory working with a hundred productive agents, but requiring customs-protection, the national gain is generally larger than in an agricultural enterprise working with a hundred productive agents and not requiring protection

Why? Because in the factory the gains of workmen receiving high wages, of creditors receiving considerable interest, and of the State receiving important taxes, are so large that even if the price of the produce, fixed by free competition with foreign countries, should leave no margin for profit to the capitalist, the national gain—viz, the total of profits realised by workers, bankers, and the State—will yet remain very important

On the contrary, in agricultural production, although the produce may compete with world prices and the capitalist receive large profits, national gain—viz, the total of the individual profits of workers, creditors, the State and the capitalist—is small compared to the national gain realised in industry

From the point of view of individual profits, it may be asserted that the total of such profits is greater in the factory, even where there is no profit to the capitalist, than the total of such profits in agriculture where the capitalist's profit may be large

The above elementary considerations explain, we think, the difference between individual and national profit

National profit is a sum the individual profit of the capitalist is an item of this sum—namely the item which will be sacrificed first if the enterprise does not prosper, but the disappearance of which is sufficient to annihilate any initiative and to prevent the actual working of the enterprise

We must now be clear about the conception of a producer If we understand as producers all the persons concerned in the production (workmen included), it is evident that all the human elements which form an enterprise of great productivity have an advantage, deriving from their exchange-relations, over the same elements of an enterprise of small productivity This is equally true in cases of international exchange as in that of internal exchange

The advantage arises from the fact that a group of producers buys, with the produce of a certain number of working days, other produce which required many more working days

This advantage explains, in the case of internal exchange, why the industrial towns are much richer than the agricultural villages Nevertheless, the nation as a whole loses nothing, since—contrary to what happens

The profit of the capitalist is a superficial thing · national profit is the decisive matter [1]

There is not the least coincidence between the two, nor in the doctrine which the classical school would like to establish that where there is no individual profit, there is no national profit [2]

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in the case of international exchange—the national economy profits by the industrial advantage

But if producer means only *contractor*, the disadvantage stated above for all elements in an enterprise of small productivity exists no longer

As in the capitalist system the individual profit of the contractor is the determining element of economic initiative, the contractor will continue to manufacture goods of small productivity, if he finds it profitable

Now, it often happens that the owner of an enterprise of small productivity—for example, an agriculturist—gets more profit from his enterprise—with low wages for his labour—than the manufacturer of a produce of great productivity, who pays higher wages to his workmen

[1] Not only may national benefit be very large, without the existence of an individual profit for the capitalist, but the contrary may sometimes happen There are branches of production which produce very few new values, representing therefore an inferior and disadvantageous branch of production compared to the average production of the country, and this is equivalent to a loss from the point of view of the whole nation such is the extensive culture of cereals, which branch of production, however, brings considerable profits to the capitalists engaged therein Thus it is once more evident that individual and national profit are not simultaneous

PATTEN, *op cit*, Chapter III, p 20 "If an exchange is advantageous for parties which are directly interested in it, they pretend that it has a benefit for the nation

The individual profit of the producers thus becomes the criterion of national prosperity

[2] It is interesting to note how this antithesis between individual and national profit appears in literature The quotations are not very abundant, since nobody has insisted with enough force and lucidity on this difference

Adam Mueller, the mercantilist, wrote in 1809 "All products have a value of double character, an individual, and a social (*buergerlich*) one, in the same way, every production has a value of double character, an individual and a social one"

And it is still Mueller who, praising Lord Lauderdale (who affirmed the difference between individual and national wealth), adds this admirable sentence "National wealth is not to be measured with metallic money, but with a higher kind of money" (*ein hoeheres Geld*)

Adam Smith also speaks about the "double nature of productivity" and he adds

"Preoccupation for *his own benefit* is the single motive which determines the proprietor of whatever capital, to invest his capital in agriculture, in industry, or in any branch of wholesale or retail trade

"The different qualities of *the productive labour* employed in any of these branches and the different value which *can be added to the annual production of the world and the labour of the community*, have nothing to do with his decision"

Among moderns, we only quote GEORGE EVERT, *Reichspolitik oder Freihandelsargument* (p 4) "National economics require not only large profits and great revenue for the promoter alone, but also *a large national*

(14) Having determined what is the net production of an economic unit, we have yet to determine, in order to measure *the productivity* of an enterprise, what the element is to which such productivity should be referred?

There are two elements limiting the capacity of production of all kinds of enterprises human labour and capital.

These elements are *common* to all branches of production, to agriculture as well as to industry

To compare the productivity of any industrial or agricultural branch, it is sufficient to refer the value of its production to the value of the human labour and the amount of capital devoted to it, in order to obtain a certain net production

All the other elements limiting production are different: they differ from one branch to another In agriculture it is the extent of arable land which is limited; in mines the volume of the coal seams, in industry the different raw materials (agricultural and mineral).

No other common elements are found in all these branches of production except labour and invested capital

The problem of production for a country is essentially as follows.

Given a number of workmen, and a ready accumulated capital within a certain limit of natural possibilities, to find the best employment for these workmen and this capital, so as to obtain the maximum of net production

If, therefore, in order to classify the different branches of production, the criterion used is *the proportion of net production and workers* on the one hand, and *the proportion of this same production and the capital employed* on the other, we shall have two sure and logical means of "*measuring*" *the productivity* of all kinds of economic activity

The most important of these two means is the relation between net production and the number of productive agents employed.

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revenue, viz the realisation of the largest possible amount as *income of the promoter, rent of land, interest on capital and wages of workmen.*"

(P 13) "From the point of view of collectivity, the only production which is 'natural' and 'useful' is that which brings the greatest revenue to the whole nation"

For the object of economics, as of all social science, is the welfare of man.

Man is the object of all economic effort.

And it is man who represents at the same time—being the only consumer of the goods he produces—the unit of measure for production and consumption

A greater productivity per head of productive agent means at the same time a greater consumption per head of inhabitant. This is therefore the real sign and most concrete mark of the prosperity of human society.

(15) It is interesting to express the two different criteria in formula, in order to appreciate human industries

The first criterion is productivity compared to each productive agent.

If P represents the annual *net* production of an industry, and T the number of all agents (workmen, engineers, managers, capitalists) who give to it all their professional activity, the average productivity of an agent is represented by $\frac{P}{T}$.

If C represents the capital invested in all that forms the plant of an industry, the average productivity of the capital is represented by $\frac{P}{C}$ [1]

Formula $\frac{P}{T}$ being applied to different industries, we may establish their classification according to the productivity of workmen—that is to say, the classification will show *which industries produce a certain value with a minimum of labour.*

Formula $\frac{P}{C}$ being applied to different industries, establishes their classification according to the productivity of capital—that is to say, the classification will show *which industries produce a certain value with a minimum of capital.*

[1] This last formula is very important, especially as regards backward countries, in which labour is abundant and capital scarce and dear, contrary to advanced countries where labour is dear and capital more readily and less expensively obtainable.

Combining the two formulæ into a single one, with the assistance of their geometrical mean, we get.

$$q = \sqrt{\frac{P}{TC}\frac{P}{}} = \frac{P}{\sqrt{TC}}$$

which is a synthetic formula [1]

[1] The same idea, expressed by J A HOBSON *in words, International Trade* (p 2) "The scientific measure of industrial prosperity is the real income, expressed in goods and services, paid to the members of the community as compensation for the use *of a certain capital and of a certain capacity of labour*"

It must be noted that the coefficient $q = \frac{P}{TC}$ may represent a coefficient of quality, *as it does not depend on the absolute size of the industrial factors, but merely on their relative size*

Let us be more explicit

A formula such as this, in order to be scientific, must, as is said in mathematics and physics, be a *homogeneous* formula

That means that if for a certain industry a great or small number of *identical* factories are taken into consideration, the coefficient of quality must remain the same, as it is naturally independent of the number of factories, if these factories are identical

Our formula fulfils this condition, for if the number of identical factories increases in the proportion k, then the number of workmen T becomes kT, the invested capital C becomes kC and the net production P becomes kP

The coefficient of quality is now.

$$q = \sqrt{\frac{KP}{KT}\frac{KP}{KC}} = \frac{P}{\sqrt{TC}}$$

That means, it remains the same

Consequently, we have now proved the homogeneous character of this formula, applied to an industry composed of similar units

When we apply the same formula to different industrial groups, the coefficient of quality will naturally give us but an idea of the *average* quality (efficiency) of a group

Each type of factory represents a necessary proportion between the number of workmen and the invested capital, this proportion is determined by the *technical* structure of the apparatus of production.

The proportion varies:

(*a*) From one industry to another

(*b*) In the same branch of industry, according to the period of time

(Generally—as we shall see later on—technical progress brings about a reduction in the number of workmen and an increase of invested capital, for a production of the same value)

(*c*) In the same branch of industry, according to the size of factories

(In point of fact, the economy of workmen in larger factories is greater than in small ones)

(*d*) Finally, the coefficient of quality varies according to the technical arrangement of a factory, as the same products may be manufactured, at the same time, in the same country, according to two different technical methods, which vary as to the number of workmen and capital required

In spite of the distinct structure of different industries included in a group, it is still possible to find an average coefficient of quality and to reflect upon its deep economic meaning

From the point of view of mathematical interpretation, the sizes in this formula should always be expressed in the same units, viz. the net production P and the capital C in dollars (*and in dollars of the same period*).

This is done in the following tables.

We could call this formula coefficient of *efficiency*, or coefficient of quality of an industry, because it gives a numerical idea of the way in which industries employ their workmen and their capital. A classification of industries according to the size of this coefficient shows which are the industries producing a certain value *with the minimum of capital and the minimum of labour*.

We may call this formula also coefficient of *quality*, because it indicates—according to its size—the industries which accomplish in the best way the social purpose of an industry; which *is to create a maximum of exchange value* (*viz. the maximum of satisfaction of needs*) *by a certain social effort*.

(16) Now it is evident, from a careful observation of facts, that passing from one branch of production to another, *the productivity of man and of capital* (the net annual production which results for each unit of capital of that branch) are extremely variable.[1]

It is surprising to note the great differences in the productivity of man, according to the activity he puts forth and the technical apparatus he uses. (See Tables A, B, C, D)

In Germany we find only one industry presenting complete statistical data: the motor-car industry.

In 1925 there was a total gross production (including repairs) amounting to 771,371,000 Mk., of which the total value of raw materials, semi-manufactured products and products supplied by other industries (including secondary work by other industries) represented 383,676,000 Mk.—about 49·7% of the value of the gross production.

The net production amounted to 387,605,000 Mk. (viz. 50·3%), which, distributed among 86·642 producers, represents 4660 Mk. *per producer per annum*.

The wages amount to 178,180,000 Mk. (viz. 23%), at an average of 2070 Mk. *per producer and per annum*.

Note that, as in America, the net production created by the producers exceeds twice the amount of wages.

[1] It is a pleasure to quote in this connection the mercantilist Adam Mueller, who wrote in 1809 "Alle wahre Arbeit ist produktiv, aber ist alle wahre Arbeit *gleich*—produktiv? Gewiss nicht. Es gibt unzaehlige Grade der Produktivitaet"

TABLE A

THE PRODUCTIVITY IN DOLLARS PER WORKER IN AMERICAN INDUSTRY IN 1914

Productivity per Industrial Group	$ per workman
Chemical industry	3430
Foods	2000
Paper and graphic arts	1940
Rubber products	1850
Tobacco	1590
Shipping industry and vehicles with or without moving power	1590
Metal and metal products (except iron and steel)	1520
All kinds of machinery (except vehicles and ships)	1485
Sundry industries (fountain pens, cameras, etc)	1455
Musical instruments and gramophones	1440
Iron and steel (except machinery)	1319
Fur industry	1240
Products in stone, glass, and clay	1120
Wood and wooden products	985
Textiles	950
Repair of railway rolling-stock	800

Productivity per Industrial Specialty Some Examples	$ per workman
Aromatic syrups	8300
Musical compositions	7110
Typewriting ink	5040
Pharmaceutical products	5000
Fountain pens	4580
Apparatus for aerial navigation	3900
Tobacco in packets, in snuff and for chewing	3800
Molten and refined copper	3650
Gas for lighting	3275
Printing works for newspapers and periodicals	3210
Cameras and photographic articles	3200
Petroleum refineries	2800
Sugar industry	2650
Belting ,,	2550
Match ,,	1965
Iron and raw steel	1810
Cement	1780
Tanned hides	1480
Paper and paper-paste	1350
Glass	1030
Boots and shoes	1000
Limestone	870
Cotton goods	645

TABLE B

ROUMANIA

Productivity per Group of Characteristic Industries in 1926

	$ 1914 per workman
Foods	525
Chemicals	422
Furs	375
Textiles	326
Glass	315
Paper and printing	296
Metallurgy	290
Electrotechnical apparatus	287
Ceramics	259
Wood	188
Construction material	186

Productivity per Characteristic Industrial Specialty

Some Examples

	$ 1914 per workman
Explosives and azotic acid	1970
Soda, carbonic acid, and hypochlorides	940
Vegetable oils	923
Cement	762
Liqueurs and brandy	725
Beer	712
Smelting works	664
Perfumeries	575
Sugar	460
Tanneries	387
Cotton goods	314
Glassware	302
Woollen goods	278

TABLE C

HOLLAND

Productivity per Characteristic Industrial Specialty

Some Examples	$ 1914 per workman
Synthetic perfume (in 1919)	1120
Flour mills (in 1923)	1090
Vinegar (in 1919)	1080
Precious stones (in 1919)	1050
Soap (in 1919)	935
Electric lamps (in 1919)	860
Beer (in 1920)	815
Paints and varnishes (in 1919)	810
Furs (in 1919)	775
Margarine (in 1919)	730
Cyanising of wood (in 1919)	715
Cocoa and chocolate (in 1919)	700
Acetylene (in 1919)	685
Paper (in 1922)	685
Pharmaceutical articles	670
Rubber (in 1919)	650
Ink (in 1919)	635
Cotton (in 1921)	595
Wool (in 1923)	560
Electric machinery and apparatus (in 1923)	555
Rolling-mills and foundries (in 1920)	480
Shoes (in 1919)	326
Furniture (in 1919)	348
Carriages and carriage-works (in 1919)	326
Colouring materials (in 1919)	228
Cooperage (in 1919)	220

TABLE D

BULGARIA

Productivity per Industrial Group in 1921	$ 1914 per workman
Electric power	560
Foods	560
Graphic arts	445
Chemicals	308
Furs	285
Textiles	242
Mines and quarries	188
Wood	174
Ceramics	126
Tobacco	121
Paper	116
Metal	89

Productivity per Characteristic Industries in 1921
Some Examples

	$ 1914 per workman
Alcohol distilleries	1170
Breweries	1120
Paints and varnishes	1110
Flour mills and rice-decortication	670
Explosives and matches	455
Printing	420
Sugar	370
Cement and cement products	330
Soap and perfume	300
Weaving and spinning of wool	300
Paper and cardboard	290
Saw-mills	242
Cotton weaving	210
Coal mines	195
Rose-essence distilleries	164
Tobacco products	138
Furniture	135
Hosiery	122

What the worker produces for his country is always much more than what he consumes.

It is not only the number of working-hours that vary from one branch of production to another, in relation to the value produced, not only the individual quality of the work of each workman that alters according to whether he be skilled or unskilled That which makes the great differences between the different kinds of production is *the organisation of the combination of material forces* (physical or chemical), *be it in agriculture or in industry*.[1]

In the same way, variations as regards *the productivity of capital*, although not so considerable as in the case of the productivity of human labour, nevertheless remain significant.

Without examining what are the factors which cause such ample variations in the productivity of national value, we

[1] PAUL ARNDT, *Der Schutz der nationalen Arbeit* (Jena, Fischer, 1925), p 33. "The productivity of national labour depends on many remote factors. For those who in comparing the different national economies, only take into consideration the possibilities of production offered by nature, many aspects of the national economy remain unintelligible."

merely wish to state that, from the point of view of *productivity* (either of capital or of human labour), the economic life of a country is essentially heterogeneous.

The whole national production is divided into an infinity of very variable forces of productivity [1]

A nation is composed of a number of distinct categories of workmen, all different from the point of view of productivity.

Each workman in a country may be ranged in one of these categories, according to his *coefficient of productivity*.

We know the classifications of the population of a country, established according to the wealth and income of each inhabitant.

Interesting diagrams have been made showing the distribution of the private wealth of citizens, according to the amount or assessment of their incomes—that is to say, the participation of all citizens in the *consumption* of the national revenue.

It would, however, be more interesting to represent in the same way the participation of all citizens of a country in *the creation* of the national revenue. In order to know the real economic structure of a country, *the diagram of distribution of national income* must have as necessary complement *the diagram of the contribution of each citizen to the creation of national income.*

The aspect of this diagram is a kind of pyramid (see diagrams *a*, *b*).

[1] All that we have studied above concerns the manner of calculating the productivity of a certain operation of production—that is to say, the productivity of a branch of production

Generally, before reaching the market, goods are the result of a long series of operations, each operation having a different productivity.

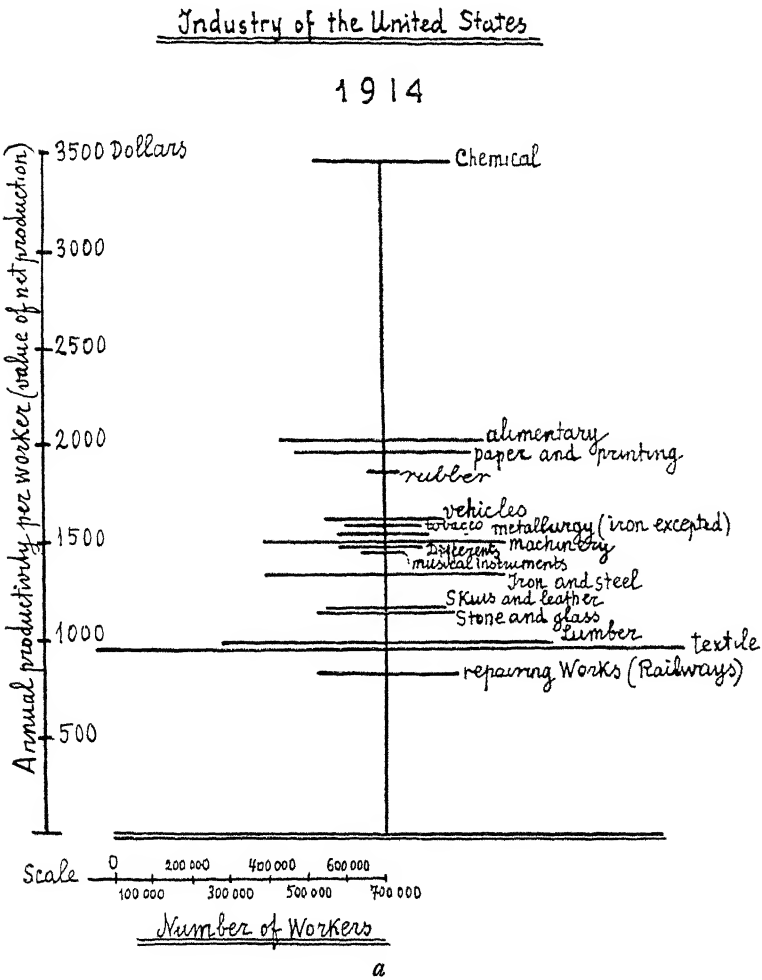
Nevertheless, one may arrive at a balanced average of all these operations, and establish from this the average productivity resulting from the manufacturing of a certain article in the country.

A certain coefficient can thus be given to every complete article, which would be the average productivity corresponding to the complete manufacture of this article—say, for instance

The article has been produced at an average productivity of 3000 gold francs per workman in a year

In this way we may classify, in their order of productivity, not only *the branches of production*, but also *the articles themselves*, which are the objects of the several branches of production.

The base of the pyramid is formed by the mass of workmen (agricultural) who have a minimum productivity.[1]



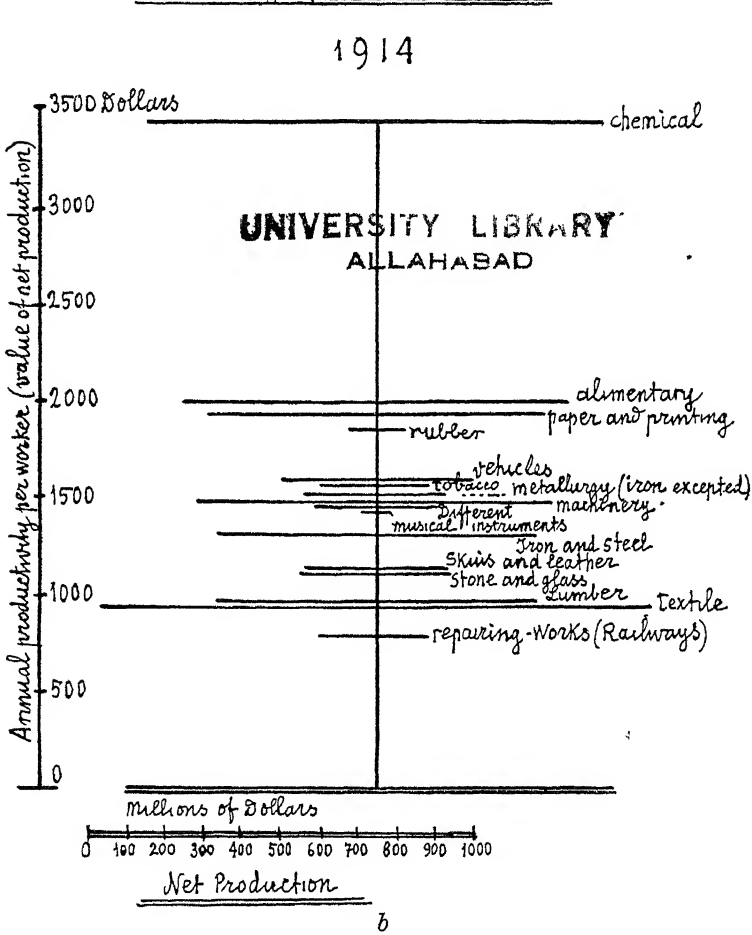
[1] An agricultural country cannot raise itself by increasing slowly and uniformly the income of all its agricultural producers

Economic progress never spreads in a similar manner in all parts of a country

All the work of progress begins through a *centre or nucleus of progress*, and these nuclei are formed by the industries which represent a superior productivity.

This base is not even represented in diagrams *a* and *b*, on which only industries figure.

In diagram *b* we have presented, instead of workmen, their net production.



The unequal distribution of productivity is just as fatal and natural as the unequal distribution of income

Let us examine Norway, for instance The average income per inhabitant amounts in the country to 240 crowns per annum, in the towns it is 582 crowns, and in the capital 789 crowns !

The more the productivity scale rises towards greater and greater productivities, the more the number of those who contribute thereto decreases.

At the summit of the pyramid, where the productivity compared to the average of the country is great, only a small number of workmen remain

And yet, in spite of contrasts and differences in the pyramid, how far we are from the aspect of the other pyramid (that of distribution) and of the still greater contrast between those who benefit by a large revenue and those who have almost none!

(17) However, it is only right to remark that in the diagram of productivity we have suppressed *individual* productivities, in order to give place only to the average productivity of each branch of production.

In fact, we have supposed that all the agents of the same branch of production have an equal productivity, and we have divided the total net production of each branch of industry by the number of all its agents (managers, engineers, workmen). Moreover, it would have been impossible to separate the part of net production of each industry belonging to its leaders (managers, engineers) and the part belonging to the workmen.

It is impossible to evaluate or to estimate numerically the *individual* merit of the different agents co-operating in any branch of production.[1]

That is why the diagram of productivity does not mention individuals, but only categories of production.

It cannot even take into consideration the exceptional

[1] One might imagine a statistical system of allotment of net product, proportional to the wages of each agent of production, by *supposing that the contribution of each agent were in proportion to his wage*

Such a supposition is naturally neither correct nor practical.

It would not be correct, for one can never evaluate what the manager of an enterprise really contributes in individual and organising capacity towards increasing the net production of an enterprise.

It would not be practical, because in industrial statistics one could never find sufficient indications as to the amount of salaries and income drawn by the capitalist or non-capitalist directors of an enterprise.

Moreover, these details would be without interest for us Our aim is to characterise and to classify *the branches of productive activity*, and not the value of individual co-operation in these branches. *The average* productivity of an agent in every branch is therefore the only useful element for our succeeding demonstrations

productivity of a genius like Edison, who may have enriched all the industries of his country, with his extremely remunerative inventions.

(18) Comparing now the different countries from the point of view of the *structure* of their revenue, a structure represented in what we have called *the diagram of productivity of human labour*, we must note that the form of the pyramid is quite different in the case of industrial nations from that of agricultural nations.

Instead of finding the bulk of the population working with a very small productivity, and limited groups of workmen (ever-diminishing groups) working with a relatively large productivity, we find in industrial countries a small fraction of the population working with a small productivity, and the bulk of the nation working with a large productivity.

This difference of structure finds synthetic expression in the average productivity (corresponding to *all* the working population of the country), which is *superior in industrial countries to that of agricultural countries or countries where there is a mixed production.*

The presentation of the structure of different countries in this clear manner, perfectly corresponding to reality, will facilitate the comprehension of our theory of protection [1]

[1] We must quote a very remarkable article, recently published in *Mechanical Engineering* of New York (March 1929), written by Messrs Alford and Hannum The authors classify all American industries according to the gross and net value of their production, referred to the unit of labour This unit (common to all industries), is the 1000 "man-hour" or the "kilo man-hour," viz the labour performed by one thousand men in one hour The authors present all the elements of production productivity, invested capital, motive power, cost of production, salaries, profits, etc , in relation to the "kilo man-hour" unit.

In our definition of the value we should not adopt *the objective theory*, upon which Ricardo's demonstrations are based, *i e* the theory in which two values are equal if they contain the same quantity of work We mean to envisage all the factors, objective and *subjective*, which serve for the establishment of values, and that, in accordance with the modern theory of equilibrium which neglects nothing in the complexity of influences determining these values

In fact, our point of departure is *the equilibrium between the different values of exchange*, existing in the international exchange of goods, we will consider this point of departure as an accepted fact, *to the origin of which all the objective and subjective factors of economic science have contributed*

It is this state of affairs which allows us to affirm, in continuing to examine economic *realities*, as we shall do later, that one branch of produc-

tion differs greatly from another in the productivity of human labour The statistical data of the different civilised countries prove this

It is in these figures that we find the quantitative expression of this new element, characteristic of labour, which is in fact *qualitative* namely, productivity

It is therefore not a priori *that we introduce this new element into the calculation of value, we have drawn it from economic reality itself, which is the result of the complexity of scientific causes and influences*

The value should therefore not be confused with the cost of production On the contrary, without discussing and ignoring the initial causes of value, *i e* of the equilibrium of values of all merchandise in their reciprocal exchange, we base ourselves upon the final equilibrium of values, in order to establish a new meaning in the *internal* aspect of the notion of value

We will specify, to be clearer, that value has both an internal and an external aspect

In its internal aspect, we take it as a fact that needs no discussion that there exists *a certain equilibrium*, which characterises, at a given moment, the relation of exchanges of all merchandise

How to pass from the external to the internal aspect of the value?

We have not, like Ricardo, taken work as a *cause* of work The new element we propose to introduce is the following departing from the *external* aspect of value—*which contains all the causes which science attributes to value*—we propose to establish, for each branch of production and for each type of goods, a relation between the created value of exchange and the *quantity* of work expended to create this value

It is this relation which corresponds to the *qualitative idea of intensity in production of the value of exchanges*—in other words, *of mean expenditure in the creation of the value of exchange*, which we call *productivity*

This meaning of productivity introduces us to the *internal* aspect of the meaning of value, it appears to be determined by two factors *the quantity* of work employed and *the productivity* of the merchandise (which corresponds to its *quality*).

These two factors are perfectly *defined* and measurable, *i e*, they fulfil all the necessary conditions for any scientific speculation

One should not insist too much on the fact that the meaning of productivity is simply a relation between two quantities, *i e*, the relation between:

(1) *The exchange value of merchandise resulting from the complex equilibrium of all the goods and services apparent at a given moment on the economic market as objects of exchange*, and

(2) *The quantity of work used to produce this value, such quantity being measured in years or hours of work expended by the respective producers*

The first term of this relation, *the exchange value*, contains all the factors and influences which determine the world equilibrium of values

The relation that we call productivity, deriving directly from this exchange value, as we have understood and defined it, includes—ipso facto—*all the objective and subjective factors which determine the value Consequently, our theory does not ignore, and above all does not neglect, any of the factors which determine the values and the equilibrium of exchange values*

It is therefore understood that we do not take as a base the exchange of goods, equal cost of production against equal cost of production

We consider productivity as a result, and not as a cause of the equilibrium of exchange values; it is determined in the function of this equilibrium which we are investigating, by complex causes which are outside the scope of this problem

Besides, we cannot see how we could arrive at a definition of productivity through the *cost of production*

In fact, the value of the net annual production which, divided by the number of workers, indicates the productivity, can only be established in the function of the exchange value of the gross production, *i.e* from the

exchange value determined by the equilibrium of all merchandise on the world market *The value of the net production, and also the productivity, appear thus as passive elements, which support the effects of the equilibrium of values in the world exchange, but do not themselves determine this equilibrium*

It is for this reason, that we could not define productivity or net production by adding up the positive elements which compose it—salaries, benefits, taxes, etc , elements constituting altogether the cost of production *We consider, on the contrary, that these passive elements, greatly variable and adaptable, are subject to compression or to enlargement, on condition that their total makes up the exchange value fixed by the world equilibrium of values*

It is completely approximate, and only as a first indication, that it is permissible to speak of the influence of *cost* upon the formation of the exchange value of merchandise For the rest, this fact is nowadays sufficiently determined by science

We must insist upon the fact *that we do not accept as the theory of value the simplest theory of the cost of production* Our definition of productivity is in accordance with the definitions and the newest explanations of exchange value, which, in the formula of equilibrium, contain the most complex and the most subtle causes up to now recognised by science

In order to pass from the abstract to the concrete, let us give an example : Supposing we take an article, based upon a quite recent invention, which has consequently a monopolist character for a country or a factory In what way will the value be determined, and what will be the productivity corresponding to its construction ? Will it be the cost of production which determines its value ? Certainly not

As a matter of fact all the complex elements which determine the exchange-value have to be taken into consideration from one side, the demand will depend on the degree of practical utility of this article, on the degree of attraction exercised on buyers by certain psychological factors, such as the pride of possession or desire to follow the fashion, etc , from the other side, demand will be influenced by the impossibility of producing a very large number of the article invented, by the ability to increase its price, through absence of competition, and lastly, by the cost price itself

There are then several elements which serve to establish the exchange-value of this new product, value—which in its turn determines, as we have shown above, *the limit which the elements of cost can reach—wages, profits, interest, taxes, etc*

Evidently, in the case of an invention, *i e* a monopoly, this limit is very large, and as in the labour market wages are fixed, there remains a large margin for the increase of the profits of capital It is not therefore the cost price which, reduced to the wages, should be very low, which determines the retail price, but the exchange-value (or retail price), which determines the limits and boundaries within which are contained the other elements of divison and remuneration of the factors of production

CHAPTER III

THE STUDY OF PRODUCTIVITY

(19) In order to examine thoroughly the notion of productivity and to take hold of it in a concrete manner, as well as to illuminate certain important economic facts referring to the idea of productivity, we shall study in the following chapters:

(*a*) The productivity of industry compared to that of agriculture.

(*b*) The evolution of productivity in industries.

The statements we shall make in these chapters will be extremely useful for the understanding of our theory and especially of its relation to the realities of economic life.

I. *The Productivity of Industry and of Agriculture.*

(20) Considering the national revenue of different countries, the first thing that strikes us is the smallness of the revenue of agricultural countries.

According to Woytinsky,[1] *European Russia* showed in 1900 an income of 67·25 roubles per head, consequently 178 gold francs per annum, or 0·46 gold franc per day and per inhabitant.

This income amounted in 1913 to 101·35 roubles per annum, *i.e.* 0·76 gold franc per day,[2] falling in 1921, however,[3] to 38·6 roubles per annum, *i.e.* 0·29 gold franc per day and per inhabitant.[4]

[1] *Die Welt in Zahlen*, Vol I, p 177.

[2] At the same time (1914) the national revenue of the U S A amounted to $335 per annum per inhabitant, *i e* 4 75 gold francs per day and per inhabitant!

[3] WOYTINSKY, *loc cit*, Vol I, p 181

[4] The poverty of agricultural workers is not a special feature of backward countries. In 1846 an agricultural labourer in Belgium earned on an average 1 18 gold francs per day, a woman 0 72 franc The situation

Before the war Roumania had much the same economic structure as Russia. According to the Roumanian sociologist, C. Dobrogeanu-Gherea, Roumania showed a net income of 0·50 gold franc per inhabitant per day.

What is the average productivity of agriculture in Roumania to-day?

According to the report of the Ministry of Agriculture, published in connection with the Bill of June 2, 1927, the gross value of the agricultural production amounted in 1926 to 76,000,000,000 lei, and the value of the gross cattle production represented 43,810,000,000 lei, in all, about 125,000,000,000 lei.

The net production, representing at the most 80% of the gross production, amounted to 100,000,000,000 lei.

The agricultural population was about 14,000,000, consequently the net production per inhabitant amounted to 6400 lei.

Putting aside women's work, which, however, has a considerable share in agriculture, and considering as producers only 4,000,000 men of the age of fifteen to sixty years, *the agricultural productivity amounted to* 25,000 *lei, or* 820 *Swiss francs per annum, consequently to* 2·25 *Swiss francs per day*

Consequently, it may be said that, in general, every 1000 Swiss francs' worth of agricultural articles exported represented the work of 1·6 producers per annum.

These are really startling figures!

(21) But what is yet more interesting to note for these countries *is the great difference between the average income per head of the agricultural producer and that of the industrial producer.*

We cannot give for these two great branches of production, nor for all countries, figures concerning the proper average

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was a little better in 1895, when a man earned 1 98 francs and a woman 1 22 francs (*Annuaire statistique de la Belgique*, 1915).

In Japan the total gross production of agriculture amounted in 1925 to 3292 million yens Referred to 5,548,599 households of cultivators, it scarcely amounted to 55 12 yens (275 gold francs) per household per year It is only the production of silk cocoons, of home industries, which, because of the multiple crops, attain a higher figure· 164 yens (840 gold francs) (*Résumé statistique de l'Empire du Japon*, 1927)

productivity, viz. the net production *per labourer (producer)*, but we can find some very interesting data for certain countries, concerning the net production per head of every man maintained by the respective branch of production

That means referring the net production of each branch not to the number of producers, but to the number of workmen and of members of their families, *i e.* to the number of inhabitants maintained by the respective branch.

According to Woytinsky,[1] the net annual production of agriculture in Russia amounted in 1897 to 51·6 roubles, or to £5 5*s.* per inhabitant maintained by it, and the net annual production of industry to £21 5*s.*, *i e.* it was *four times greater.* At the same time, in England the net annual production of agriculture amounted to £65 per inhabitant maintained by it, and the net annual production of industry to £102; *i e.* it was *157 times greater.* Further on, we shall insist on the disproportion existing between the superiority of industry over agriculture in backward and in advanced countries.

In order to get an idea of the average productivity of agriculture in all countries of the world, compared with all other human activites, we can make use of two tables published in the third volume of Woytinsky's book.

On page 4 of that book (see Table E) we may calculate for the twenty-three principal countries of the world, the total number of agricultural producers, which amounts to 179 millions, and the total number of *all* producers, which is 343 millions.[2]

Thus we ascertain that for these twenty-three countries the agricultural producers represent about 52% of the total number of producers.

Can we now know what *income* is represented by agriculture in the total income of all these countries at the same period of time? We have given in another table (see Table F) the data respecting the distribution of income of different

[1] *Loc cit*, Vol IV, p 7.

[2] The respective censuses were taken at different dates, between 1911 and 1925, consequently we have totalled up the figures established at different dates, but, since we are interested only in the proportion of agricultural workmen, this variation in dates has no sensible influence

branches of national activity for twenty-two countries in the year 1896.

It may be seen that in a total income of £10,780 millions, agriculture represents £2132 millions, *i.e.* 20% (a very approximate figure).

TABLE E

Labour in Agriculture

Country	Productive Population			
	Year	For all branches of the production	In agriculture	
		(in thousands)	(in thousands)	(%)
U S S R	1920	43,000		
Germany	1920	33,884	10,708	31 6
Great Britain and Ireland	1911	20,147	2,409	12
France	1911	20,931	8,517	40 7
Italy	1911	16,370	9,086	55 5
Poland	1920–21	13,000		
Spain	1910	9,300	4,221	56 2
Roumania	1920–21	7,500		
Czechoslovakia	1920–21	7,000	2,470	35 3
Yugoslavia	1920–21	5,300		
Hungary	1910	8,744	5,601	64 1
Belgium	1910	3,120	520	16 6
Holland	1909	2,262	640	28 3
Portugal	1920–21	2,400	1,440	60
Austria	1910	14,951	8,506	56 9
Sweden	1910	2,199	1,016	46 2
Greece	1920–21	2,820	965	32 3
Bulgaria	1910	2,249	1,823	81
Switzerland	1920	1,899	486	26 2
Finland	1920	1,436	1,032	71 9
Denmark	1921	1,524	475	31 2
Norway	1920	1,108	394	35 6
Lithuania	1920–21	1,250	1,010	81
Latvia	1920–21	830	670	81
Esthonia	1920–21	570	460	81
U S A.	1920–21	41,614	10,953	33 2
British India	1920	146,414	105,688	71 4
Total figures of the countries not italicised, of which we have complete data		343,022	179,090	52%

TABLE F

Income of Agriculture in Different Countries in 1896

Country	Total income (in millions of pounds)	Agriculture in the total income (in millions of pounds)	(%)
Russia	1,004	324	32 3
Germany	1,285	250	19·4
Great Britain and Ireland	1,421	138	9·8
Austria-Hungary	707	192	27 1
France	1,205	250	27 5
Italy	436	122	28
Spain	277	81	29 2
Belgium	169	26	15 8
Holland	109	22	20 2
Portugal	61	16	26 2
Scandinavian States (Sweden, Norway, Denmark)	200	49	24 5
Roumania, Bulgaria, Serbia	140	50	35 7
Greece	28	8	28 6
Switzerland	66	12	18 2
For all Europe	7,108	1,540	21 6
U S A	3,178	488	15 3
Canada	186	34	18 3
Argentina	95	28	29 5
Australia	213	42	19 7
For all twenty-two countries	10,780	2,132	19 8

If the agricultural income, which is 20% of the total income of the nations, is produced by 52% of the active population (i e., *of the number of producers*), *the remaining 80% of this income is produced by the remaining 48% of the active population.*

As a mathematical result,[1] *all other human activities are, on an average, approximately 4·35 times as productive as agricultural activity.*

It is what may be termed the *intrinsic* inferiority of agriculture opposed to the *intrinsic* superiority of industry.

[1] $\frac{80}{48} : \frac{20}{52} = 4{\cdot}35$

(22) It is surprising to see what a small fraction of directly productive activities is retained by agriculture

In the twenty-two countries of our table which show an actual production the incomes derived are :

£2132 million for agriculture, *i e*	37 5%.
£2869 million for industry, *i e*	50 5%
£699 million for mining, *i.e.*	12%.
£5700 million Total of actual production	100%

Agriculture, therefore, represents merely 37·5% of the total production of these twenty-two countries and much less than industry.[1]

This is not surprising, when, even in such an agricultural country as Russia,[2] agricultural production represented in 1900 54·9% and in 1913 53·9% of the national production (according to Prokopowich)

In other countries the proportion is :

France, 1911 (according to Pupin)	28 1%.
Austria, 1913 (according to Fellner) .	33 2%
Hungary, 1913 (according to Fellner)	67 4%

(23) As regards the share of agriculture in the national *wealth* of countries, it amounts, on an average, to 31·2% for the twenty-two principal countries, the maximum being for Spain (50 9%) and the Balkan countries (49·5%), the minimum for England (17·6%).

Whilst agricultural income and wealth represent such a small fraction in the total economy of a nation, the agricultural population shows, in nearly all countries, a very large percentage of the total population.

In fact, on the strength of minute researches of world statistics, Woytinsky[3] states that for Europe (including

[1] According to WOYTINSKY (Vol I, p 159), the total net revenue of industry (excluding mines) is greater than the total net revenue of agriculture in the following countries England, U S A , Germany, France, Belgium, Holland, Switzerland, Canada and Australia (equal in the latter)

[2] See Table, WOYTINSKY, Vol III, p 7

[3] Another interesting example is given by Austria and Hungary, according to FELLNER (see WOYTINSKY Vol IV, p 6) * (*See Table G*)

In Austria, in 1913, the productivity (average productivity per head)

Russia), for U.S.A , and for India, the proportion of agricultural producers over against industrial producers is 2·5

It is only in occidental and Central Europe that the proportion modifies and becomes 1·5 . 1.

TABLE G

NATIONAL REVENUE OF AUSTRIA-HUNGARY IN 1913

	Austria.	Hungary	Austria-Hungary.
I *National revenue* (in thousands of Austrian crowns) *of*			
(*a*) Agriculture (including forests, game and fishing) [1]	4,169	4,550	8,719
(*b*) Industry (including mines)	6,104	1,839	7,943
(*c*) All branches of economics (pure national income)	12,565	6,741	19,306
II *Productive population* (in (thousands) .			
(*a*) In agriculture . .	8,506	5,601	14,107
(*b*) In industry	3,628	1,424	5,052
(*c*) In all branches of economics	14,951	8,744	23,695
III *National income per inhabitant* (in Austrian crowns)			
(*a*) In agriculture	490	815	618
(*b*) In industry	1,683	1,291	1,572
(*c*) Average for all the country	867	771	817
IV *Income per inhabitant in percentage of the average income for all the country*			
(*a*) In agriculture . .	57	106	76
(*b*) In industry . . .	194	168	192

(24) Combining the statistics from pages 6, 7 and 8 of Vol. IV of Woytinsky, we can compose Table H.

amounted to 490 crowns per annum for agriculture, and to 1683 crowns for industry, *i.e* a superiority of 3 45 for industry over agriculture

In Hungary the average productivity of agriculture amounted to 815 crowns and that of industry to 1291 crowns, giving a superiority of 1·58 for industry

We are doubtful about these last data, since it is unlikely that the advantage of industry over agriculture should be so small

[1] According to the *Annuaire Statistique pour les Pays-Bas*, 1924–25, the *gross* production of the land (agriculture, cattle-breeding, horticulture, forestry) amounted in 1923 to 1236 millions of florins, and the *net* production to 860 millions of florins This *net* production divided among the 622,514 agricultural *producers*, corresponds to 1380 florins per head of producers.

TABLE H

Country	Year	Productivity or value of production per head of producers (in gold francs)		Proportion of preceding values
		in industry	in agriculture	
Russia .	1897	540	136	4% [1]
U S A . .	1909–10	5560 [2]	2750 [3]	2%
England .	1907	2550	1625	1 57%

(i) This table shows first that in different countries the variation of productivity in agriculture is much greater than in industry.

From Russia (136 francs) to the U S A (2750 francs) the agricultural productivity increases twentyfold, whilst industrial productivity increases only tenfold from Russia (540 francs) to the U S A. (5560 francs)

Even if we leave to one side the U.S A , with its exceptional level of prices, comparison between England and Russia shows that the agricultural productivity of England is twelve times as great as that of Russia and the industrial productivity only 1·75 times as great

It follows that *the productivity of industry is relatively more constant than that of agriculture in different countries*

This is only natural, since modern industry presents everywhere—even in new countries—the same technical and economic characters, its *productivity being less dependent on the state of advancement of the country*. Agriculture, reflecting more exactly the general development of a nation, shows the enormous difference between advanced and backward countries (as between England and Russia)

(ii) Again, the above table shows—with direct reference to our preceding conclusions—that the contrast between industrial and agricultural productivity is greater in backward and agricultural countries and smaller in advanced and industrial countries.

It follows that *for agricultural and backward countries there*

[1] For the year 1923–24 the proportion is even greater in Russia.
[2] Value of 1909 [3] Value of 1910.

is a greater relative advantage to pass from agricultural production to industrial production.

It follows also that advanced civilisation is characterised by the tendency to equalise the output of the different productive activities. An advanced civilisation causes the marked economic contrasts which characterise backward civilisations to disappear.

(25) We have noted this tendency in comparing the contemporary position in several countries, representing very different degrees of civilisation.

It would be interesting to verify the same phenomenon in the different phases of the evolution of one country.

The proportion between the average agricultural and industrial productivity (see 137) in the U S A. has evolved as follows : [1]

1880	1890	1900	1910	1920
3·21	3·20	2·55	2·16	1·44

It is again easily seen that there is a continual tendency to equalise productivities. The contrast between industry and agriculture tends to disappear owing to an equalising force.

What is this equalising force?

It is, first, the levelling up of prices. The average price of industrial goods falls in relation to the average price of agricultural goods (see 133).

Industrial progress seems comparatively to become more and more difficult. Between 1880 and 1910 agricultural productivity has grown (see 137) from $167 (value of 1890–99) to $392, viz. it has multiplied itself 2·34 times.

At the same time, industrial productivity has grown from $537 (value of 1890–99) to $849, *i.e.* it has multiplied itself only 1·59 times. We note *a relative slackening of industrial*

[1] It is remarkable to note the great differences between average wages in industry and agriculture

According to WILFORD KING, *Wealth and Income of the People of U S A* (New York, Macmillan, 1923), p 110, in 1921 the average annual wages amounted to $1027 and per hour to $0 53 in industry, whilst in agriculture the same annual wages amounted to $486 and per hour to $0 20

It should be noted that, since 1899, trades are no longer included in the statistics of American industry, a fact which increases the average productivity of industry. If the same statistical method had been retained, the last three figures would have been even smaller

progress compared with agricultural progress The relative progress of industry is slower.

We shall further show (27), that industrial production does not increase at the same rate as the industrial means required by production

(26) Comparing, for agriculture and industry, the capital required for production, we shall see that in the U S A for a capital of $1000 invested in agriculture, the net production amounted to $150 in 1909–10 and to $210 in 1919–20, for the same capital invested in industry, the net production amounted to $480 in 1909–10 and to $560 in 1919–20.

Therefore in order to realise a net production of $1, industry asked in 1909–10 for the investment of $2·2, whilst agriculture demanded for the same purpose $6·6—*namely three times as much.*

Agriculture always remains at a marked disadvantage compared to industry, on account of the large investments of capital it requires to attain to the same net production

Evolution of Productivity in Industries

(27) In order to examine the evolution of industrial productivity, and the factors which determine it, there is no more useful study than that of American industrial statistics.

Considering only the *general* statistics of American industry (without special indications for different industrial groups) from 1849 up to the present time, the following remarks may be made [1]

(1) *The progressive mechanisation* of American industry is clearly the result of two factors.

First, the increase of motive power, which is not merely in proportion to the increase in the number of workmen, but much larger.

In 1869 every workman was assisted by 1 14 H.P. of motive power, in 1914 by 3·20 H.P. and, finally, in 1923 by 3·76 H.P.

[1] See Table A, where all the values are indicated in dollars, of the buying capacity of 1914.

TABLE

AMERICAN

Data corresponding to	Number of workers	Effective motor energy in H P	Capital	Wages	Gross Production.	Net production obtained by industrialisation
	(*a*)	(*b*)	(*c*)	(*d*)	(*e*)	(*f*)
			(In millions of dollars reduced to the index of 1914)			
I Great and small industry including factories)						
1849	957,059	—	500,000	220,000	940,000	433,000
1859	1,311,246	—	870,000	328,000	1,640,000	742,000
1869	2,053,996	2,346,142	1,410,000	516,000	2,820,000	1,165,000
1879	2,732,595	3,410,837	2,865,000	976,000	5,510,000	2,030,000
1889	4,251,535	5,938,635	8,055,600	2,334,800	11,570,800	5,197,900
1899	5,306,143	10,097,893	12,267,300	2,901,170	16,250,100	7,070,600
II Great and small industry (excluding factories)						
1899	4,712,763	—	11,219,000	2,510,400	14,258,600	6,038,800
1904	5,468,383	13,487,707	14,739,000	3,035,400	17,202,100	7,318,200
1909	6,615,046	18,675,376	18,998,200	3,533,000	21,311,300	8,793,050
1914	7,036,247	22,437,072	22,790,900	4,078,300	24,246,400	9,878,300
1919	9,096,372	29,504,792	18,330,000	4,300,000	25,800,000	10,340,000
III All the industries excepting mechanical enterprises having a production valued at less than $5000 per annum						
1914	6,896,190	—	—	—	23,987,800	9,709,500
1919	9,000,059	—	—	—	25,650,000	10,300,000
1921	6,946,570	—	—	4,310,000	23,000,000	9,650,000
1923	8,778,156	33,094,228	—	6,870,000	37,800,000	16,150,000

NOTE —The figures in dollars published by the *Statistical Abstract of the United States*

For the year 1849 . 107 For the year 1869 . . 120 For the year 1889 . 81
" " " 1859 . 115 " " " 1879 . . 97 " " " 1899 . . 8(

Secondly, by *the increase of invested capital*, which increases more rapidly than the number of workmen.

In 1849 every workman was assisted by a plant costing $3240 of 1914 value.

Therefore, even if the variation of the dollar compared with goods is taken into consideration, in this interval of sixty-five years, *it shows sufficiently how much more capital and more mechanical plant modern American industry demands to-day, in order to enable the workman to realise a high productivity.*

(ii) *Compared with net production in industry wages*

I

INDUSTRY

Coefficient of industrialisation $\frac{f}{e}$	Amount of H P corresponding to a worker $\frac{b}{a}$	Amount of dollars out of capital corresponding to a worker $\frac{c}{a}$	Average of wages $\frac{d}{a}$	Net Production in dollars obtained per worker *Productivity* $\frac{f}{a}$	Net production per dollar out of capital $\frac{f}{c}$	Percentage represented by wages in the net production $\frac{d}{f}$	Net production per worker less wages $\frac{f-d}{a}$	Force of production $\sqrt{ac}$	Efficiency general (coefficient of quality) $\frac{f}{\sqrt{ac}}$
0 46	—	525	230	453	0 87	0 51	223	690,000	630
0 45	—	660	250	568	0 85	0 44	318	1,068,000	659
0 41	1 14	690	251	570	0 82	0 45	319	1,700,000	685
0 37	1 24	1050	358	745	0 71	0 48	384	2,790,000	730
0 45	1 40	1890	550	1220	0 64	0 45	670	5,850,000	885
0 43	1 88	2310	550	1315	0 57	0·41	765	8,050,000	875
0 42	—	2380	531	1280	0 54	0 41	749	7,300,000	830
0 42	2 47	2000	555	1340	0 50	0 41	785	8,950,000	820
0 41	2 80	2710	535	1325	0 46	0 40	790	11,200,000	785
0 41	3 20	3240	580	1400	0 43	0 41	820	12,650,000	780
0 40	3 25	2010	480	1130	0 56	0 48	650	13,000,000	795
0 40	—	—	—	1420	—	0 45	770	—	—
0 40	—	—	—	1140	—	0 43	1060	—	—
0 42	—	—	620	1390	—	—	—	—	—
0 43	3 76	—	780	1840	—	—	—	—	—

1925, have been transformed into dollars of 1914, according to the following index

For the year 1904	. 86	For the year 1914	100	For the year 1921	.	.	190
„ „ „ 1909	. 97	„ „ „ 1919	. 242	„ „ „ 1923			160

represent a fraction of surprising stability, which from 1849 to 1889 hardly varies between 51% and 41%, and from 1889 to 1914 hardly between 41% and 40%

Consequently, the more the general productivity of industry grows, the more wages increase, in the same proportion.[1]

(iii) The net annual productivity of the workmen increases continually from $453 (of 1914) in 1849 to $1400 in 1914.

[1] These figures express real and effective progress, and show, moreover, that real wages (referred to the index of prices) have more than doubled in half a century

Taking the period 1890–99 as basis for the index of wages, the index will be 46 8 in 1850, 94 9 in 1890, and 103 in 1913

The increase has been trebled during the sixty-five years registered by statistics.

This is a very important fact, upon which we shall comment later It is meanwhile only fair to say that in the twenty-five years before 1914 the increase was not very rapid, since for 1889 we find a productivity of $1220 and for 1914 a productivity of $1400. *This represents hardly* 16% *increase in twenty-five years.*

(iv) *A very important fact in the evolution of industry is the lack of correspondence between the increase of the means employed by industry and the increase of its net production*

Let us take two very different periods of industrial evolution, 1849–99 and 1889–1914

In the first period net production increased in the ratio of twelve.

The means of production have increased in very different proportions, *i.e* in the proportion of 2·84 for capital, and in that of barely 4·5 for workmen (we can make no deduction for motive power, since statistics do not give figures for 1849).

Consequently, one may conclude that for this period of forty years the increase of net production was almost the same as the increase of invested capital, being, however, more rapid than the increase of personnel.

In the second period, 1889–1914, *i.e.* during twenty-five years, the net production has increased barely in the proportion of 1·90, consequently progress has been much slower.

The means of production have increased in the proportion of 2·84 for capital, 1·65 for labour and 3·77 for motive power.

Consequently, the number of workmen has increased in almost the same proportion as production, while capital and motive power have increased much more rapidly than production.[1]

[1] This conclusion reminds us of the following passages from the works of Schultze-Gaevernitz and King

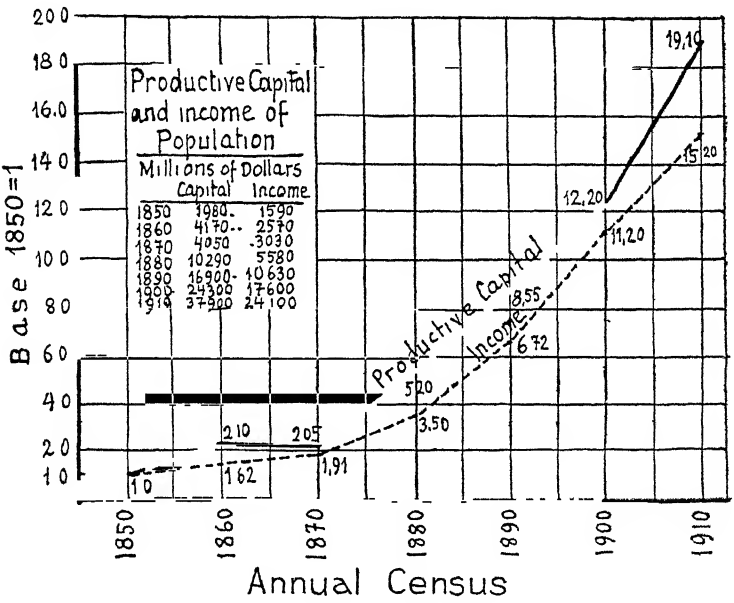
SCHULTZE-GAEVERNITZ, *op cit*, p 124· "The technical progress in every industry is first manifested by the predominance of labour and capital over material." Page 126 "Technical progress, *which consists in giving more importance to the capital factor than to the labour factor*, etc, etc" Page 145 "This remarkable increase through the *throstle* and the *ring-spindle* is obtained by means of *larger expenses for installation and superior motive power Here, then, capital takes the place of labour.*"

KING, *op. cit.*, p 238: "First we prove for the great industry that for a produce, for a certain unit—for example, a yard of cloth, one ton of iron—*the part which results for labour as well as for capital gradually*

The conclusion that one draws is far from being optimistic.

For the whole of American industry, in the last twenty-five years before the war, there is an evolution governed by the law of disproportionate output.

The means employed by industrial production, labour, capital, and especially motive power, increase rapidly, while the net production does not increase as rapidly as the total of these means [1]



decreases, the share of labour, because it is constantly replaced by capital, the share of capital becoming always more productive through technical progress, also becomes cheaper, on account of national economic development"

[1] This disproportion between the increase of industrial forces and the increase of net production may be expressed mathematically, considering the geometrical mean of the three ratios, 1 65, 2 84, 3 77, as the synthetic expression of the increase of industrial forces

Consequently we get for the increase of forces

$$\sqrt[3]{1\,65\ 2{\cdot}84\ 3\,77} = \sqrt[3]{17\,6} = 2{\cdot}60$$

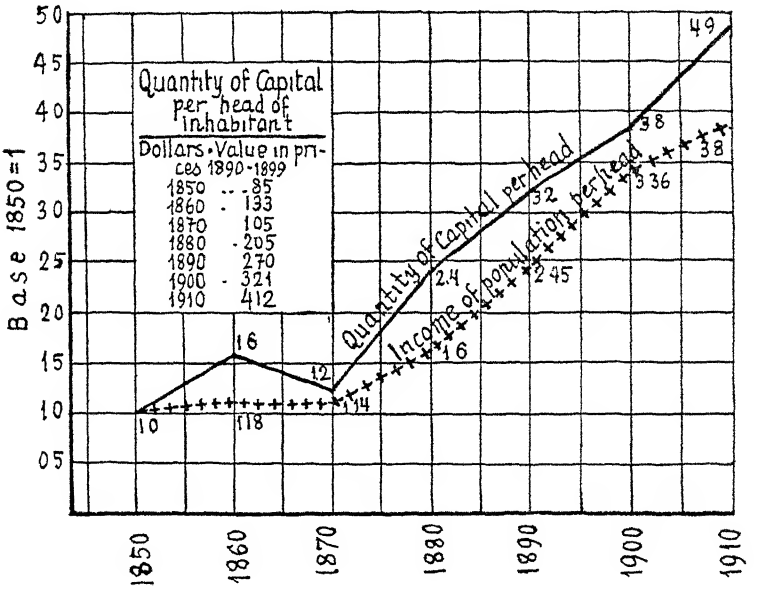
Now, the net production is far from having increased in the same proportion It has increased only in the proportion of 1 90, *viz it is by 27% inferior to what it would have been, if American industry had been, between* 1889 *and* 1914, *developed according to the law of the proportional output*

Therefore it remains established that net production is being developed, according to the law of less than proportional output

(v) This phenomenon may also be perceived in other ways.

If we refer every year the net production to the invested capital, in order to establish *the net production of a capital of one dollar*, we see that this production, which amounted to $0·87 in 1849, amounts only to $0·43 in 1914

Once more, we conclude that in recent times, in order to produce a given value, a larger and more expensive plant is required.



In 1849, in order to produce a dollar one had to invest (one might say "to plant") $1·16. In 1914, in order to produce one dollar, one had "to plant" $2·32.

(vi) Finally, as regards the variation of the coefficient of quality, we note that in recent times there has been a *systematic* retrogression.

In fact, the coefficient of quality was 630 in 1849 and 885 in 1889, consequently there was a considerable increase, but in 1914 the same coefficient had fallen to 780.

Accordingly, during the last quarter of a century the quality (such as we have defined it) of American industry has

declined by 12%. The year 1889 seems to have been a culminating point in the evolution of industry. In this year every dollar invested and every agent employed in industry produced the maximum of real value.

The comparison between the average wages of workmen and the net production from which wages are deducted shows us that this last surplus *is much more important than the wages themselves* (*see* formulæ (*f-d*,) *a*).

That means that the workman produces on an average *more than double the net value of what he receives for his work*; or, that *what he gives to the community is more than what he retains for himself.*

II. *Productivity of Mines.*

(28) It would be interesting to compare the productivity of mines with the productivity of agriculture and industry [1]

Unfortunately, there are complete data for all countries, except the United States

In the U S A the total value of mining products of all kinds amounted in 1919 to $3174 million,[2] which means for a total of 1,088,444 producers $2900 *per producer per annum.*

We must deduct from the gross production :

$531 millions for materials and tools.
$53 millions for fuel brought from elsewhere.
$124 millions for oil and power brought from elsewhere.

$708 millions in total

There remains as net production: $2466 millions, representing $2226 *per producer per annum.*[3]

[1] One might object that productivity resulting from the inexhaustible wealth of a country is preferable to the unequal productivity resulting from the exhaustible wealth of a country In practical economics this observation must be taken into consideration

Our theory has merely given data which must be adapted to particular cases in order to serve as political guidance Nevertheless, there are very few cases in which a country has seen its economic level falling on account of the exhaustion of its mines

[2] *Statistical Abstract of the United States*, 1925

[3] In Belgium (*Annuaire Statistique de la Belgique*, 1913, p 411) we find for the year 1912 a gross production of coal worth 380,444,000 francs

Dividing this gross production among 145,670 workmen, above and below the surface, we get an average gross production of 2600 *francs per annum and per workman*, and an amount of wages of 1440 *francs per annum and per workman*

At the same time the average of net production, per producer, in the industry in the strict sense of the word amounted to $3400, consequently the proportion of the two productivities is: $\frac{3400}{2266} = 1{\cdot}50$.

In the U.S A (see 24) mines are therefore more nearly *classified to agriculture than to industry*.

The wages alone amount to $1460 millions, representing $1·345 *per producer per annum*.

We must notice how large the net production is in mines, as compared with gross production, of which it represents 79%, while in industry it represents barely 40%

We must also remark that the 1,088,444 producers are assisted by 6,816,814 H.P. (which means 6·25 H.P. per producer, while in industry there is only 3·25 H.P. per annum) and a capital of $7225 millions (which means $6630 per producer.)

The annual net production of $2484 millions represents a very small fraction, barely 0·29 of the invested capital, while in industry it represents 0·56.

As regards mines, one may easily see the functioning of the law of decreasing output.

In fact, in England [1] it has been the experience that, between 1907 and 1924, the productive forces have increased considerably (agents of production in the proportion of 1·40 and motive power in that of 1·75, consequently both factors, in a goemetrical mean, in the proportion of 1·56); at the same time net production, measured in money, has increased in the proportion of 1·44 (which means, reduced to the index of prices, 1·83, in the proportion of 0·77).

Therefore a decrease in *production* in the proportion of 0·77 corresponds to an increase in the *means* of 1·56.

The reduction of the production, in relation to the means, is 50%.

In Germany (*Statistisches Jahrbuch*, 1927) the average wages in the production of coal (Steinkohle) amounted to 1980 *mks* per annum and per workman, and in the production of brown coal to 1870 *mks per annum and per workman*. Nevertheless, the gross value produced amounted in the first case to 3410 *mks per annum and per workman*, and in the second case to 4770 *mks*

[1] *Further Factors*, etc., *op. cit*

In the same interval and for the whole of English industry —other than mines—the productive forces have increased as follows: agents of production in the proportion of 1·12, motive power in that of 1·86, consequently both factors, in a geometrical mean, in the proportion of 1·44.

The production, measured in money, has increased by 2·15 (which means, reduced to the index of prices, 1·83, a proportion of 1·18)

Accordingly, an increase of 1·18 in production corresponds to an increase in means of 1·44.

The reduction of production, as referred to the means, is 18%.

The war might be invoked as explanation of this reduction. But we had reached similar conclusions for pre-war America. (See 27)

PART II

THE THEORY

CHAPTER I

INTRODUCTION TO THE THEORETICAL PART

(29) We are going to elaborate our theory of protection from a critical examination of the theory of international trade, according to Smith, Ricardo, and John Stuart Mill.

But in order to understand our criticism, and our attempt at reconstruction, some ideas and some points of view of particular interest must be considered.

Therefore, in this introduction to the examination of the theory of international trade, we shall develop the following points :

(i) Our theory of protection intends to put forward only the direct and present economic advantages of protection, leaving aside any social, indirect, and future advantages.

(ii) We shall consider every country as an economic unit, and the advantage it may obtain from protection as a whole, apart from all considerations of the distribution of home trade.

(iii) We can avoid the dangers of the theory of value in our demonstrations, by considering, on a first approximation, prices as the fixed expression of a certain balance between exchange-values of all international goods, and introducing later the variability of prices.

(iv) We can consider the meaning of exchange as an international operation as quite other than the meaning of exchange as an operation between individuals, and this clear distinction shows that advantages of exchange are influenced by advantages of production.

I. *" Economics " First and Foremost.*

(30) There are authors who claim [1] that there is the same

[1] SUMNER, *op. cit*, p. 18.

antithesis between free-trade and protection as between science and empiricism.

Appearances seem to be with them But free-trade does not as exactly represent science as protection represents empiricism.

We noted this not long ago. Free-trade looks scientific because it pretends to derive from a certain determinism which was in fashion at the beginning of the century, and was then taken for science.

The discoveries of great naturalists, and especially those of Darwin, had spread the conviction that nature is governed by a certain automatism, thanks to which living beings—after a series of struggles against their environment—always reach a state of equilibrium in which the preservation of the species is maintained.

The same conception was adopted for economic phenomena by free-traders and generally by the Liberal school.

They expect the best distribution of productive forces of the world from the same automatism which seems to intervene in the organic world. By this analogy—if it really is an analogy—they conferred a scientific character upon free-trade.

We cannot deny the empiric character of protection; it comes about not through the doctrine itself, but through the insufficiency of its development.

We have already shown that actual protection is not bound to a general principle, and that its application does not derive from a doctrine bearing a character of logical unity.

The day that protection is endowed with such a doctrine, its real scientific character will distinctly appear.

If we set ourselves the problem of the discovery of a protectionist theory, it is because we think there must necessarily be such a theory.

And we think with Sumner,[1] "If a matter is true in practice (for example, protection), the theoretical principle of its truth can be established, and this principle will be true."

[1] *Op. cit.*, p 197 "If commerce were the object of suspicions and fears, it is certain that we should need regulations in order to distinguish safe and profitable commerce from dangerous commerce But the attempts to formulate a definition in this sense show the folly of such suspicions."

It is true that Sumner does not think that protection could satisfy this condition.

Nevertheless, he sets the problem.

Sumner thinks that protection is not able to supply rules because up to now it never has done so. We do not think that he must be right—for ever.

(31) If we have taken a somewhat roundabout way of expressing ideas, it is because we intend to quit altogether the position that protection has up to now occupied over against free-trade, and because we mean to fight free-trade on its own ground.

Let us explain ourselves.

The doctrine of free-trade has always pretended that there is a direct and immediate advantage in not imposing customs duty upon international exchange, and that the best form of production and distribution is obtained by free-trade—this form being characterised above all by cheapness of all products.

In this way, free-traders have always insisted upon the purely economic advantages of their system.

On the contrary, protectionists, and especially List, have always put forward in favour of their doctrine factors more or less unconnected with strictly economic factors.[1]

These are, for instance, the moral necessity of varying the occupations of a nation, the need of education and intellectual development of a nation by the aid of a national industry, and the exigencies of national defence [2]

Our intention and our conception mean to break away from the protectionist tradition and to show by economic arguments aiming exclusively at the economic point of view the value of protection under certain conditions.

Our theory seeks the immediate, direct, economic advan-

[1] Dr. Louise Sumner, "Freihandel und Schutzzoll in ihrem Zusammenhand mit Geldtheorie und Wahrungspolitik" (*Weltwirtschaftliches Archiv*, July 1926) "With economic arguments, the protectionist movement is never justified." "Above all, we must depend upon strictly economic bases"

[2] This exceedingly important distinction has been formulated by Conrad "The free-trade aim is determined only by economic points of view; the basis of protection includes social and political motives"

tages of a convenient and well-constructed protection. It takes its stand on the same plane as free-trade, and on this plane, under certain conditions, it promises sure results in favour of protection.

II. *Each Country as an Economic Unit.*

(32) In all that follows, our method will consist in treating each country as a single unit of international trade, without taking into consideration the variety of private interests of each country

We have shown that the errors in reasoning generally made in statements concerning international trade are due to the fact that the problem of the relations between two countries is uselessly complicated when they are considered as two units with different problems about the purely internal effects of free-trade or protection.

Therefore, when analysing the phenomena of international exchange, and wishing to declare oneself for or against protection, the basis of the demonstration is the repercussion of customs taxes upon costs of living, wages, etc. There is here certainly an error of method.

Undeniably the protectionist phenomenon may be completely studied without taking into consideration all the repercussions of internal customs. But the phenomenon is such that the economic advantages of protection for a country as a whole may always be established without obligation to consider all its internal aspects. In the special case of our theory, this simplifying method is the more indicated because it leads to definite and exact conclusions which cannot be changed by the later introduction of internal aspects of the problem

Therefore the conclusion of the first approximation remains definitive.

That is why it is necessary and sufficient to consider countries as units, both as a whole and in their mutual relations.[1]

Therefore, for us, each country will be a unit in international

[1] According to List "in international trade nations carry on trade, not individuals."

trade The advantage or the disadvantage of the protectionist or free-trade systems will be proportioned according to the loss or profit realised by the unit that each country represents as a whole All our theoretic demonstration is independent of the eventual repercussion by customs taxes in the interior of each country. It will be the object of a second analysis—in another book—to establish these multiple effects and to examine the means of attenuating those which are pernicious

But this analysis is independent of our theory. It may be developed afterwards, and will bring about no changes in our theoretic conclusion

III. *Values and Prices*

(33) It is a great error in method, frequently made when treating problems of international exchange, to introduce, from the beginning of the analyses and demonstrations, the variability of price of the exchanged products in relation to supply and demand

The example is usually taken of two countries exchanging their products in isolation from the rest of the world

Based on this hypothetical separation, the prices of goods exchanged are made to depend on the relative importance of supply and demand in these two countries only The absurdity of this method is evident Prices vary according to the supply and demand of the whole world, and not merely in any two countries.

In this way variation in prices is apparently taken into consideration, but in reality only certain variations in a special case are considered; and these variations have no true relation with reality nor do they permit any correct or useful generalisation to be formed from the conclusions they furnish

Our method will be quite different.

For a first approximation—which will be sufficient in order to draw both precise and also extended conclusions—we shall consider the case of a country exchanging with all the rest of the world.

Let us suppose this country to be very small, so that the

goods it produces, that it exports or imports, may not be in such quantities as to influence appreciably the international price of such goods

So in the production and foreign trade of this small country the prices of all goods are fixed at a certain moment of time, whatever may be the production and displacement of goods, whatever the abundance of a certain product or the scarcity of another.

It will be seen that this hypothesis is neither abstract nor extravagant. In the world there are so many countries—small or large—in which production, trade, and consumption of any kind do not produce variations in the international price of goods

Proceeding from this hypothesis, we shall establish a theory of international trade for this hypothetical country and the conclusions which ensue for its economic policy.

Having exhausted our hypothesis and drawn clear conclusions from it, we shall suppose that a large country, or several countries at a time, have the same economic policy which has been found useful in the special case

Of course, this time we shall include the variation in price of goods. There will then ensue a complication which will have to be studied, we may forecast the result of our study by announcing that the complication will alter by very little the conclusions we shall have drawn from our first hypothesis.

(34) Our method will have the immeasurable advantage of making us avoid the stumbling-blocks of the theory of value Without accepting absurd hypotheses and without being obliged to construct all our edifice upon a certain definition of value, our method will allow us to circumnavigate this always critical point of economics without landing ourselves in absurdities.

In making our first hypothesis—that of a small country the production and trade of which do not influence the value of international exchange—the value of goods is (at a certain moment when there is a certain balance on the markets of the world and on the markets of that country) simply their price.

It is the price that in this well-defined case is the measure of our values.

It does not vary according to a given interval of time, and it is not influenced by the way the small country deals with its trade and productive forces, even if the whole country produces only pianos—the price of exchange of these articles will be the same in the world market. This method exempts us from criticising, as other authors do, international prices and their first causes We have not to judge the relative utility of goods nor their effective demand due to the actual market caused by the state of tastes, education, distribution of wealth and buying capacity

For us, the price of goods at a certain moment is a reality, and nothing more. We cannot bring into the discussion of prices the whole of social policy [1]

Such a discussion would lead us unnecessarily far away.

We prefer not to judge what it is that leads men to appreciate one value more than another, and thus to establish their relative prices. We note undeniably at given moments the existence of a certain balance between all the products of the world and between all desire for their possession, and this balance is expressed for that moment by certain prices.

(35) To the real social utility concealed by prices we are quite indifferent We see, for instance, that at present men like tobacco (whatever may be our opinion upon the utility of this article), and that its price is balanced at a certain level.

We see that a piano represents a certain price—that is, a certain buying capacity for the country that produces it. It is a fact. If the piano is bought in order to be the victi[m] of a young lady with no musical talent, that is no reaso[n] us to discuss its " social utility." [for]

Economically, and at a given moment, the piano re[presents] a value measured by its price; that is equivalen[t] things (possibly more " useful ") having the [same] to other For the country that produces it, the piano [has the] same price.

[1] We shall not say, for example, with M Rist, th[at] represents a exchange value of the production of an industry does [not] the increase in industry is advantageous for society, as the value is [does] not prove that the demand does not necessarily conform to social utili[ty] the demand and the

certain buying capacity, that is its significance and its first utility.

Sumner clarifies the question remarkably in these terms: "I find it sometimes difficult to make people understand the difference between the need for an 'industry' and the need of its products" Nothing could be better said. A country requires an industry not only as means of directly satisfying its needs, but also as a machine which creates for it a buying capacity which it may turn to account with other countries.

According to the larger or smaller capacity of any industry to supply international buying capacity (with the same disposition of workmen and capital), this industry is more or less of interest to national economics.

It is upon these facts that our theory is to be constructed.

IV. *Individual and International Exchange.*

(36) The most important argument of free-traders is that a nation, like an individual, must buy the goods it requires as cheaply as possible.[1]

Once more, to make comparisons is not to reason.

An individual may, usually, have at a given moment only a single profession which brings him in a definite income. With this income he must try, by the goods he buys, to secure the greatest possible satisfaction

He can change his income only by changing his profession —which, for him, is quite another problem

At the same time, an individual does not generally create, through his own activity (except he be an agriculturist) many of the utilities he consumes. He merely buys the utilities he needs, paying for them with money out of his settled income So the question for him is to buy the cheapest in order to get the best return from his fixed income. There is no connection between the productive activity which secures his income and his buying activity.

It is not the same thing for a nation. A nation satisfies a

[1] LUJO BRENTANO, *Das Freihandelargument* (Berlin, 1901), p 4 "The tailor does not manufacture the shoes he wears he buys them from the shoemaker, the shoemaker does not make his clothes he buys them from the tailor What is wise in the economy of a household cannot be foolish for a nation"

great part of its needs by its own labour. By changing the structure of its productive apparatus, it can satisfy a larger number of its needs, and thus diminish the number of the necessaries which have to be imported from outside

On the other hand, imported goods—the only ones bought —are not paid for out of a settled income, as with individuals.

" Goods are paid for with goods " produced by the nation. The quantity and value of the goods (that is, the capacity of purchasing other goods) may vary.

The advantage or disadvantage of the buying operation depends very much on the power and facilities to produce goods which serve for exchange

But the cheapness of imported goods is not sufficient to give an idea of the advantage of the operation. This advantage does not depend only on " how cheaply goods are bought," but also, and especially, on " how buying capacity may be created."

The problem is infinitely more complex than in this case of an individual

When an individual produces and buys, the settled elements are :

(i) His share of consumption of the goods he produces.

(ii) His income in ready money for buying all the other goods he requires.

The first element is almost fixed, because as long as an individual does not change his profession he produces the same amount; therefore he consumes only the part of his production that he requires

The second element is fixed because it results from the individual's profession, changing his profession is not for him a commercial problem

Accordingly the first two elements of his commercial problem are fixed

The amount of utilities which the individual will secure for himself with his fixed income is variable.

The commercial problem of an individual is to provide the highest satisfaction by means of his fixed income.

For a nation the problem is quite different.

(i) First, its share of consumption of the goods it produces

is variable Supposing the consumption of a nation to be always the same for all kinds of products, this nation may change the direction of its production so that it ceases to produce certain articles which it formerly consumed, and which it will henceforth import, and it produces, instead of these, other articles for its own consumption, and will no longer import them

This change is advantageous (as we shall demonstrate later on as a consequence of our theory) every time that the production of a gross article has been given up for the production of a finished article (*i e* for a superior productivity). This is how the part consumed by a nation of the amount it produces varies enormously when it changes its production even if it does not change its consumption.

(ii) Then, the income with which a nation purchases abroad is not fixed, as in the individual's case.

Generally, a nation pays for its imports with the goods it exports

In order to measure the advantage of the exchange operation, the two variable terms should be compared.

Money (the means of payment) is no longer fixed; it becomes the capital and the labour employed in producing the export goods So money depends on the amount of effort expended on the goods, that is, the hours of labour and the amount of capital used in their production.

The payment is neither fixed nor limited. It depends on the work of a nation (its direction and its intensity) for the value it represents in exchange to be as great as possible.

So all the buying problem of a country depends not only on what is bought, but also on what is produced, in order that it may purchase [1]

When an individual buys, there are two fixed elements (the consumption of his own produce and the income disposable

[1] CAWES, *Cours d'Economie Politique*, p. 723 " For the consumer the price of products has no signification except as compared to his income, now as far as concerns the majority of mankind income represents the remuneration of work Consequently the essential thing is for labour to procure abundant revenue, for what purpose would the cheapness of goods serve if one could not earn the wherewithal to buy them ? We are brought back to the question which of the two systems, absolute commercial liberty, or rational protection, will best develop national labour ? "

for purchasing), and an unknown element (that which he buys), when a nation buys, there are three variable and unknown elements (the consumption of its own produce, the goods it exports in order to be able to buy, and the goods that it imports)

For an individual, the buying problem is a strictly commercial problem; for a nation the buying problem is never a strictly commercial problem—it is always at the same time a production problem.

Free-traders always see the exchange and the advantage exchange value by itself.[1]

We shall examine these statements thoroughly later on. For the moment, we are content with showing how far we are from the absurd slogan of free-traders a nation, as an individual, etc.[2]

If we want to sum up the position of a country in international exchange in another formula, we may say:

"Tell me not only what you buy, but also with what you buy, in order that I may tell you whether you buy cheap or dear"

"The only effectively good bargain is the good bargain of the nation considered as a sole unity"[3]

"There is not and never was a greater and more dishonest deception than the cheapness resulting from free-trade, and no class has suffered more from its consequences than our working classes"[4]

[1] The advantage and disadvantage must be looked for in the production process, and in the comparison made between two production processes There are only two means of obtaining wanted goods by producing them directly, or by producing exchange goods in order to acquire them In both cases the question is production, and the exchange problem cannot fail to be a comparison of the two production processes

[2] What is really remarkable is that the doctrinaires of free trade were always aware of the importance of the character of goods exported for the appreciation of the advantage or the disadvantage of the imported goods According to John Stuart Mill, while the value of goods produced in the interior of a country is determined by the cost of their production (?), the value of goods imported depends upon what it costs to procure them, viz upon the value of goods produced at home in order to pay for goods imported

It is surprising that, in spite of all this lucidity, one could lose one's way. An extremely valuable admission, in the same sense, is made by Bastable, *op cit*, p 21 "One observes clearly that for a country the cost of its imports must be measured by that of its exports."

[3] FRANCIS, *op cit*, p 44. [4] *Ibid*, p 47

(37) John Stuart Mill was aware—better than any other writer—of the two quite different factors which determine the advantages of international trade. the exchange factor and the production factor.

The second factor is very often neglected in the conclusions of free-traders, or at best it is mixed up with the exchange factor, so that one is unable to distinguish the influence of either. Mill [1] writes

"There are two senses in which a country obtains commodities cheaper by foreign trade: in the sense of value and in the sense of cost."

(i) The purport of value depends upon the purely commercial operation made after the production of goods.

The rate of cheapness depends on Mill's law, "the equation of international demand," and he tries to demonstrate, in the case of exchange between two countries, how commercial profit is divided between both.

(ii) The purport of *cost* depends upon the operation of production of the goods which serve to pay for foreign goods [2]

"But in the other sense, that of cost, a country gets a commodity cheaper when it obtains a greater quantity of the commodity with the same expenditure of labour and capital. In this sense of the term, cheapness, in a great measure, depends upon a cause of a different nature, a country gets its imports cheaper in proportion to the general productiveness of its domestic industry; to the general efficiency of its labour The labour of a country may be, as a whole, much more efficient than that of another. . . . Countries which obtain their own productions at least cost also get their imports at least cost."

Unfortunately, the meaning John Stuart Mill gives to the idea of efficiency does not seem to be that of the absolute productivity which characterises one merchandise compared with another which forms our essential idea, but the meaning

[1] JOHN STUART MILL *Principles of Political Economy* (London, Routledge), Chap. XVIII, p 404

[2] BRENTANO, *op cit* "The foreign goods we acquire do not cost us the same as they do abroad, nor what they would cost if they were manufactured directly, they cost what the goods we exchange for them cost us"

—following Ricardo—of the comparative advantage of one country over another in the production of the same goods.

The principle he lays down, according which the general efficiency of labour decides the real cost of imports, is none the less remarkable.

The idea of these two distinct factors which determine advantage in international trade is expressed even better by Mill in the following passage :

" What her imports cost to a country is the function of two variables; the quantity of her own commodities which she gives for them and the cost of these commodities. Of these the last alone depends upon the efficiency of her labour; the first depends on the law of international values "

This admission is most important. It shows that the analysis done by Mill, in order to determine the distribution of trade advantages, can only lead to a result of partial interest and solve only a superficial problem The bottom of the exchange question is always the question of the cost of goods produced in a country for exchange.

Here Mill has ended his investigations That is why he has not succeeded in combining thoroughly the cost factor and the quantity factor (price) so as to give us a synthesis of the exchange problem

It is towards this that our efforts are directed.

CHAPTER II

THEORY OF INTERNATIONAL TRADE

The Two Revisions

(38) Free-trade has built up its system upon what is called the theory of international trade.

This theory has been developed by three great classic writers—Adam Smith, Ricardo, and John Stuart Mill.

Adam Smith laid down the principle of international division of labour, which states that a country derives an advantage from international trade every time it imports goods which it could only produce itself under inferior conditions (at a higher price) than such goods are produced abroad

Ricardo went further with the assertion that a country derives advantages from international trade not merely by importing goods which it would produce under inferior conditions compared to abroad, but even when it imports goods the foreign production of which is superior, but less superior than that of other goods.[1]

This is the principle of comparative advantage in international trade.

At last John Stuart Mill, in sifting to the bottom Ricardo's theory, was able to establish according to what laws the profit of international trade is divided among the countries that have exchanged goods.

[1] The connection between Adam Smith's principle and Ricardo's is well seen If Ricardo's principle is right, *a fortiori* Smith's will be right too.

If a country derives an advantage from importing goods in the production of which it could be superior to the foreign country (when this superiority is surpassed by the superiority of production of other goods), it will derive more advantage from importing goods in the production of which it is inferior to the foreign country

So if we prove Ricardo right, we do the same for Smith But the opposite would not be right to refute Ricardo does not mean to refute Smith

This is another reason for developing our second review, for in our first review we refute Ricardo without refuting Smith In the second review we shall have to refute Smith explicitly

(39) The heart of the theory of international trade is formed by Ricardo's famous declaration upon comparative advantages [1]

Why, later on, shall we have to deal so much with Ricardo's example?

Because it is admitted by everyone to be the strongest point of the free-trade theory This central stronghold must be taken if we want to conquer the whole town.[2]

Ricardo's declaration therefore represents the apogee of the free-trade theory [3]

It is estimated—according to Cairness, that "it plumbs the depths of the theory of international trade," and many writers think that it is in this direction that the heaviest task for the economist lies [4]

Moreover, the remarkable advantage of Ricardo's theory is that it presents the problem of international trade on exclusively economic grounds without mixing up political or social arguments with it.

In this way the problem can but gain in clarity, and assumes a character which permits of a truly scientific discussion.

It is by placing ourselves on the same ground that we

[1] Prof Josef Gruntzel, "Zur Theories des Schutzzolles" (*Weltwirtschaftliches Archiv*, Aug 1918) "This theory (of free-trade) found its deep and scientific basis in the classical theory of comparative costs According to Cabiatis' opinion no one has more clearly developed this theory than its author, Ricardo."

[2] "With the theory of relative cost of production, Ricardo has improved the theory of division of international labour to such an extent, that it has become the scientific basis of the free-trade movement, and it has been recognised, in a more or less altered form, by all free-traders since its inception

"The theory of free-trade rests on Ricardo's exchange theory, not only in England, but in all civilised countries (*Kulturstaaten*) it has also been the principal point attacked by the protectionist theory, but it has not up to the present been possible to reduce this theory '*ad absurdum*' in spite of its admitted defects due to a one-sided application of the abstract method"

[3] Ricardo's deductions, together with John Stuart Mill's idea, form the culminating point of the theoretic basis for the political promotion of free-trade

[4] Bonn, *Das Wesen der Weltwirtschaft* (*Archiv fur Socialwissenschaft und Socialpolitik*, Vol 35, 1912) "It is very probable that the theory of relative cost of production, such as it has been developed by the classics and such as we find it in modern treatises, is capable of improvement Its transformation (*Ihre Umgestaltung*) is the most important task of world economics (*Weltwirtschaft*)"

shall develop our criticism and build up our theory of productivity.

(40) The criticism and the reconstruction we propose to make will be developed in two special demonstrations (two reviews). The first demonstration will have a less precise though perfectly clear character; the second will be a rigorously scientific presentation

These two separate demonstrations do not imply a useless repetition

The first renders our mode of thought familiar and prepares for the comprehension of the second—which may have an unprepossessing appearance owing to its uncompromising character.

First Revision

(41) The whole theory of comparative advantage in international trade was built up by Ricardo on his famous example of the trade between Portugal and England.

It is this example which we must examine, alas! so minutely. What is Ricardo's example?

The Hypotheses

(i) England and Portugal may produce cloth and wine under unequal conditions. Portugal's superiority in the production of wine is well known in comparison with England.

If, however, Portugal were isolated from England, it would be obliged to take away a part of its capital labour used for the production of wine in order to produce under relatively less advantageous conditions the cloth it requires.

(ii) But, Portugal being not isolated from England, she can send her wine against English cloth.

The quantity *Qw* of Portuguese wine demanded by England, for which is exchanged the quantity *Ec* of English cloth demanded by Portugal is not determined by the *amount of labour*[1] employed for production of these goods (as would be the case according to Ricardo's theory of value[2] in the

[1] WALRAS, *op cit*, p 189, 16th lesson "The theory which places the origin of value in labour is less of a narrow theory than an entirely empty theory. It is an inexact affirmation, and it is especially a gratuitous assertion"

[2] The principle of Ricardo's theory is that in a country goods are exchanged according to the law equal labour for equal labour.

exchange of two kinds of merchandise in the same country)

But it would be wrong to pretend that Ricardo would always have admitted that the exchange of goods in the same country could be made exclusively according to the proportion of labour each of the goods contained

In fact, he has two different opinions

Indeed in Ricardo's work we may distinguish two clearly contradictory parts

When, commenting on his famous example of the exchange between Portugal and England, he writes (*op cit*, p 127) "In this manner, England should have given the produce of the labour of a hundred English workmen against the labour of eighty Portuguese workers A similar exchange cannot take place between different persons of one and the same country

"The labour of 100 English workers cannot be exchanged against that of eighty workers"

This is to express in the clearest way that internal exchanges in a country are made by "equal labour for equal labour" There is no other possible way of understanding the above proposition Moreover, the whole demonstration of the famous international trade-theory is founded on this postulate

The *quality* of labour plays no part whatever, only the quantity is important, as it is the only factor which determines the exchange of goods in one and the same country

That is Ricardo's first opinion Unhappily, it is the important one, as he founds his theory of comparative costs of production on it

We are going to expose Ricardo's second opinion, which is clearly distinct from the first, it is formulated in the theoretic part of his work, where he deals with value.

He does not deny the existence of a difference of quality between different sorts of labour, and he does not state that, labour being uniform, the values of goods are strictly proportional to the amount of labour which produced them

He only thinks that the quality of labour for different sorts of manufacture is very constant and that it varies only with different generations

Well, the proportion according to which the exchange of two sorts of goods is made depends only on the qualities (different) and on the quantities (different) embodied in both

But, since the qualities of labour, respectively applied to the two sorts of goods, are constant for a long time, it follows that the proportion of the exchange depends only on the respective quantities of labour embodied

Let Q and q be the quantities of labour embodied in the two sorts of goods M and m

Let K and k be the respective coefficients which characterise the quality of the labour which is being developed in both cases

The exchange proportion of these two goods will be $\frac{QK}{qk}$

If $QK = qk$, a quantity M will be exchanged for a quantity m.

But if $Qk = 2qk$, the same quantity M will be exchanged for twice the quantity of m than before

Now, Ricardo says that K and k being very constant, the exchange proportion depends only on $\frac{Q}{q}$, which is variable, so it depends only on the proportion of the quantities of labour embodied If this proportion varies, that is, if, in order to produce certain goods, more labour is required

(111) In England, in order to produce the quantity Ec of cloth, the labour of 100 workmen is required during a year;

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than before, the value of these goods (measured by the other goods) varies in the same proportion

Or, since a proportion of the two values is being established according to their qualities and quantities of labour embodied, this proportion can only change if the respective quantities of labour vary

Let us quote Ricardo word for word (*op cit*, p 21)

"As the investigation, upon which I should like to direct the attention of the reader, concerns the effect of variations in the relative value and not in their absolute value, it is not important to look for the relative degree of quality (*Wertschaetzung*), in which the different kinds of labour find themselves

"We can tranquilly conclude that no matter what would be the inequality existing at the beginning between them, and no matter how much more talent, ability, and time were needed in order to learn any special trade compared with another, this inequality remains nearly the same from one generation to another, from one year to another, or at least the variations from one year to another are insignificant, and consequently for short periods they have but a very slight influence on the relative value of goods"

It is therefore no longer a question of the equality of labour which has been developed in any production, but simply of an inequality which remains constant, and that is quite a different matter

We do not get $K = k$, but only $K =$ constant

So, if, for instance, a unit of fine merchandise A requires the labour of 50 workmen during a year, and another unit of ordinary merchandise B requires the labour of 100 workmen during a year, both these units may be exchanged for one another in spite of the amount of labour included in the second being larger than in the first, merely because the quality of the labour included in the first is superior

Nevertheless, if this exchange proportion or this proportion of the values of two goods is established, the quality of the labour for both goods varies very little It follows that, later on, the proportion of the values of the two goods can be changed only if we exchange the quantities of labour which are respectively developed for the production of the goods If, for instance, in order to produce a unit of A, the new labour conditions require twenty-five workmen a year instead of fifty, whilst in order to produce a unit of B, 100 workmen are still required, then the relative value of A and B changes, and instead of exchanging a unit of A for a unit of B, we shall now exchange two units of A for one unit of B

The example we have given corresponds perfectly to the idea clearly expressed by Ricardo (Chap I, p 20)

"If one compares the value of a single and same object at variable periods, then one must hardly take into consideration the ability and the relative intensity of the labour which is necessary for each object, as they have the same effect in the two periods, if one adds or deducts (to the quantity of labour) a tenth, a fifth part, or a quarter, then an effect directly proportional to the relative value of the respective object is produced"

But in the simple form, equal labour for equal labour, it is really inadmissible in a scientific demonstration However, this form serves as the basis of his theory of relative advantage in international trade

After all, Ricardo's inconsistency is indefensible In Chap I, p 20, he writes

"Thus more labour can enter into the difficult work of an hour than into the easy occupation of two hours; or in the exercise of an hour in a trade which it takes ten years to learn, than in the task of a month of a simple and ordinary occupation"

but to produce the quantity *Ew* of wine (which would be exchanged for this if the wine were imported from Portugal) the labour of 120 workmen is required during a year.

So England has no advantage in itself producing the quantity *Ew* of wine which it requires (employing 120 workmen during a year), as it can import the same quantity from Portugal paying for it with the quantity *Ec* of cloth (which represents only the work of 100 workmen during a year).

(iv) In Portugal the situation is different. Here, in order to produce the quantity *Ec* of cloth, ninety workmen are sufficient, working for a year, and in order to produce the quantity *Ew* of wine, eighty workmen are sufficient, working for a year.

So Portugal has no advantage in itself producing the quantity *Qc* of cloth which it requires; on the contrary, it is to its interest to produce only wine, and to pay for the cloth *Qc* imported from England with wine.

(v) It is to the advantage of Portugal to import cloth, although the quantity *Qc* of cloth is produced with less work in that country (ninety workmen a year) than in England (100 workmen a year) The reason is because, for Portugal,

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And, on the other hand, in Chap VII, p 127, he writes :

" The labour of a hundred English workers cannot be exchanged for that of eighty workers "

Out of these contradictory conclusions we are to choose a third one, which is still Ricardo's, and which throws some doubt on the value of his own theories

Indeed, Ricardo is fully aware that labour alone can determine neither the cost of production nor the relative value of objects, and in introducing the idea of fixed capital and of its remuneration, he says (Chap I, p 29)

" The principle that the quantity of labour applied to the production of goods determines their relative value is modified essentially by the utilisation of machines and by that of fixed and durable capital "

As a consequence of this remark, Ricardo takes a great deal of trouble in demonstrating the influence exerted on the cost of production, in identical labour consumption conditions, by the existence of variable capitals engaged for different periods of time in different production concerns

So, he takes into consideration the interest of the capital engaged when calculating the net cost

It is a very commendable effort

But how much the larger complications of modern production remove Ricardo's simple principle from us !

It seems Ricardo had a presentiment of this when (Chap I, p 38) he says that his rule " is valid in all cases where labour is almost solely applied in production "

Now, since such a case hardly ever exists in modern life " the rule " represents practically nothing

That is the third conclusion, and the only one we can approve of

the production of wine is even more advantageous than that of cloth So the " comparative advantage " is conclusive.

(vi) The result is that England sells the quantity of cloth *Qc* which represents the produce of the labour of 100 English workmen during a year, for the quantity of wine *Qw* which represents the produce of the labour of eighty Portuguese workmen during a year.

It is an exchange which could not take place in one and the same country, since in the interior of a country, owing to the free circulation of capital and labour, goods are exchanged mutually by the amount of labour each article has required.

It may happen that the produce of the labour of 100 Englishmen were equal to that of eighty Portuguese, sixty Russians or 120 Indians.

" Such an equivalence can never happen between the different goods produced by the same country " (*see note above*).

(vii) The theoretic conclusions of this example are the following :

I —When a country produces two kinds of goods both under more advantageous conditions than abroad, but the first kind with a comparatively greater advantage than the second, the first kind ought to be produced and the second imported.

II.—When a country produces two kinds of goods both under less advantageous conditions than abroad, but the first kind with a comparatively larger disadvantage than the second, the first kind ought to be imported and the second produced.

These two conclusions show that, if the first type of country carries on trade with the second type, they both have advantages from their foreign trade, one importing what the other exports.[1]

[1] Professor H Loria, who has been so good as to make known to us his views on the ideas which we have developed, commenting on our criticism of Ricardo's example of the exchange between England and Portugal of cloth and wine, says that once the international exchange has begun, England no longer produces wine and Portugal no longer produces cloth, therefore " *non a più il caso di parlare di un valore nazionale dei due prodotti importati.*" With regard to this, we must remark that in international trade it often happens that certain goods are partly produced at home and partly imported, and it is not necessary wholly to stop the home production of the imported goods.

(42) Let us fully criticise the facts and conclusions of this famous example ·

The first striking observation is the unreal character of the concrete facts contained in Ricardo's hypothesis [1]

(*a*) Indeed, there is very little likelihood, if any, of the productivity of wine in Portugal being superior to that of cloth in the same country (eighty workmen are employed for wine and ninety workmen for cloth in order to produce an equivalent exchange value)

Generally, indeed, the productivity of industrial commodities is far superior to the productivity of agricultural commodities (see par 21).

(*b*) Then there is even less likelihood, if it is not quite impossible, of Portugal being able to produce cloth under better conditions than England (ninety workmen are employed in Portugal and 100 in England, for the same amount of cloth).

That is why, independently of how we are to criticise the reasoning founded upon Ricardo's example, we are going to change the hypotheses of the problem for others more in accordance with economic and historic reality, and we are going to reconstruct our reasonings and our conclusions on the basis of these new hypotheses (see par 49).

(43) The second remark we must make regarding Ricardo's example concerns a serious consequence of the importance of the example and the extent of the conclusions drawn from it. We can prove later on that Ricardo's example is rather

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There the falsity of Ricardo's affirmations, and the contradiction of his theory still persist, but . .

As a general observation, we are surprised to see that Mr Loria does not recognise that Ricardo's theory has grown old and unsuitable We appreciate that Mr Loria wants to remain faithful to the doctrines of free-trade, but we do not understand why he, himself, does not revise and improve Ricardo's theory which constitutes the basis of free-trade

[1] Could all that Ricardo's example wants, all that keeps it so far from reality, ever be shown ?

Ricardo imagines only two countries which produce only two sorts of goods.

He considers a single production factor, labour, and admits it has a character of uniformity which it is far from having

Finally, he neglects the forwarding charges, and he thinks that production is proportional to labour without taking into consideration the eventual variation according to the law of less than proportional or more than proportional output.

particular and poor; and that Ricardo draws from it more general conclusions than the example itself allows.

Indeed Ricardo's conclusion is that every time a country has a superiority in the production of certain goods and a comparatively larger production in another kind of goods over another country, it must produce only the second kind of goods and import the first.

In order to come logically and correctly to such a general conclusion the hypothesis of Ricardo's example ought to be just as general, and there ought to be no particular fact to restrain the opportunities of application of the conclusions.

Unfortunately, as we shall see, this condition is not fulfilled, and Ricardo's reasoning is far from being strict and scientific. Indeed, for Ricardo's example to be as general as his hasty conclusion, it would have had to contain only the following three data:

(*a*) Portugal is superior to England as to the production of cloth.

(*b*) Portugal is superior to England as to the production of wine

(*c*) The second superiority is comparatively greater than the first.

The absolute figures employed by Ricardo should have contained no other elements than the three aforesaid. Presented in this way only would the example have been correct.

It would have to be supposed that:

(*a*) Portugal's superiority over England in the production of cloth is $x\%$ (let it be 11%), which means that, with the same number of workmen, 11% more cloth is produced in a year in Portugal.

(*b*) Portugal's superiority over England in the production of wine is $y\%$ (let it be 50%)

(*c*) The second superiority of $y\%$ is comparatively greater than the first of $x\%$.

It is, moreover, in this correct way that Ricardo has presented another of his examples (see note to par. 45).

Instead of this, Ricardo adds a series of foreign elements to this, the only general hypothesis Thus let it be ·

cp = productivity of cloth in Portugal.
ce = productivity of cloth in England.
wp = productivity of wine in Portugal
we = productivity of wine in England.

When two kinds of goods are exchanged (having the same exchange value) *the corresponding productivities are necessarily in inverse ratio to the number of workmen employed to produce them (see also below), or the productivities are in inverse ratio to the number of workmen.*[1] So the essential data are (see above) —

$wp > we$ superiority of wine in Portugal
$cp > ce$ superiority of cloth in Portugal
$wp > cp$ / $— > —$ / $we > ce$ comparative superiority of the production of wine in Portugal compared to the production of cloth in Portugal.

We consider these conditions as the only essential ones, because, as we have shown, Ricardo's conclusion refers merely to general conditions.

He considers his conclusions valid at all times that such general conditions are fulfilled, they are not really so, and so he gives to such conclusions a general character which leads him to quite false assertions. As we shall see later on, Ricardo, whilst illustrating his example with concrete figures, adds, without being aware of it, new conditions which are not general and which give his example the appearance of a particular case

What are these conditions ?

They are the series of four productivities in the following order :

$$wp > cp > ce > we.$$

How does Ricardo admit this series? From his own hypotheses. At first Ricardo stated that an equal quantity

[1] See also foot-note (2) to par 16, which defines "the productivity which allows the complete manufacturing of a certain merchandise.

of wine is produced in Portugal by 80 workmen and in England by 120 workmen, so he supposed that .

$$(1)\quad 80\ wp = 120\ we$$

Then he stated that an equal quantity of cloth is produced in Portugal by 90 workmen and in England by 100 workmen, so he supposed that

$$(11)\quad 90\ cp = 100\ ce$$

Notice that these two hypotheses were the only necessary and possible ones in order to maintain the example in the generality imposed by the subsequent conclusion These hypotheses state merely that

$$wp = 1{\cdot}50\ we$$
$$cp = 1{\cdot}11\ ce,$$

thus suppose two superiorities, of which the first is comparatively greater. But Ricardo, not content with that, goes on to add a supplementary condition, *which is a restriction*, admitting the exchange of English cloth produced by 100 workmen for Portuguese wine produced by 80 workmen It follows that 100 English workmen and 80 Portuguese workmen produce equal exchange values, so :

$$80\ wp = 100\ ce.$$

With the two equalities now obtained we get $80\ wp = 90\ cp = 100\ ce = 120\ we$ [1] Indeed, the descending scale $wp > cp > ce > we$.

[1] Here we may notice a serious inconsistency in Ricardo's theory which arises from the same fact which causes the inopportune introduction of the supplementary condition

$$80\ wp = 100\ ce.$$

It follows that

$$80\ wp = 90\ cp$$
$$100\ ce = 120\ we,$$

so Ricardo has to admit that the labour of eighty Portuguese in wines has the same exchange value as the labour of ninety Portuguese in cloth, and that the labour of 100 Englishmen in cloth has the same exchange value as the labour of 120 Englishmen in cloth, and so must admit that goods may be exchanged in a country otherwise than according to his principle, equal labour for equal labour

Here is a new absurd consequence due solely to having introduced, in a most inopportune manner, the supplementary hypothesis of the exchange between Portugal and England according to the condition $80\ wp = 100\ ce$.

Accordingly, by introducing this supplementary condition which was not necessary for the demonstration, Ricardo has particularised the case of the comparative advantage We may expect to find out that his would-be general conclusions are valid only for this particular case.

(44) Having cleared up this point, we may more easily enter into the examination of the basis of the theory of comparative advantage contained in the assertions of point (v) of our example.

This basis is most important; it forms the knotty point of the theory.

Ricardo's conclusion here is, in its general and absolute form, quite wrong.

The truth is that there are cases when it is right, but there are others—as we shall see—when it is utterly wrong

Ricardo's error is due to the fact that in his conclusions he allows himself to be exclusively led by the comparative superiority of the production of wine in Portugal as compared with England.

In point of fact, what should be compared are the absolute degrees of productivity of the four kinds of goods

Now, in order to classify the four kinds of goods according to the degree of productivity their production allows of, how does Ricardo's hypothesis help us? We only know three things:

(*a*) The productivity corresponding to cloth in Portugal is superior to the productivity corresponding to cloth in England, so, $cp > ce$.

(*b*) The productivity corresponding to wine in Portugal is superior to the productivity corresponding to wine in England, so, $wp > we$

(*c*) The superiority of the production of wine in Portugal is comparatively greater than the superiority of the production of cloth in Portugal, so

$$\frac{wp}{we} > \frac{cp}{ce}.$$

What we know allows us to classify only the productivities corresponding to the same goods (first wine and then cloth) in two different countries.

Nothing allows us to classify the productivities corresponding to two different goods (wine compared to cloth) in the same country (England or Portugal) on the basis of these data, the only admissible ones. Now, these three data, *a*, *b*, and *c*, are the only essential data of Ricardo's example, and from them Ricardo has drawn his general conclusion. He supposes a certain superiority of Portugal over England in the production of cloth (a ratio of 100 90 = 1·11, so an advantage of 11%), and an even greater superiority in the production of wine (ratio of 120 : 80 = 1·50, so an advantage of 50%).

He concludes that every time a country has a relative superiority over another in the production of a certain kind of goods (a relative advantage) that is a greater superiority than the superiority (*i e.* advantage) it has in producing another kind of goods, it must exclusively produce the first goods. It is always the comparative advantage that preponderates. According to Ricardo, it is the comparison of the production of the same kind of goods in two different countries that is decisive, and not the comparison of two different kinds of goods in the same country.

(45) For our demonstration we must lay down certain hypotheses

We have, according to hypothesis, two series of descending productivities (see par. 44), which may be set out as follows :

On one side :

wp = wine in Portugal.
we = wine in England

On the other side :

cp = cloth in Portugal.
ce = cloth in England.

In Ricardo's hypothesis the advantage of Portugal over England in the production of wine is relatively greater than

in the production of cloth. It follows that the proportion *wp we* is greater than *cp · ce*, so ·

$$\frac{wp}{we} = \frac{cp}{ce}.$$

These two series may be classified in relation to one another in three different ways, which form three different cases to be studied.

The first case presents the descending series

cp cloth in Portugal

ce or *wp* cloth in England or wine in Portugal.

we wine in England.

We must notice that, the position of *ce* and *wp* in relation to one another being indifferent (as we shall see), we have been able to join two variants into a single case

As every country must pursue the realisation of its most productive activity without consideration of the way in which it is supplied (see principle in pars. 34 and 35), it follows that in the first case there is an advantage for Portugal to produce only cloth (its productivity in this article being superior to its productivity in wine), and for England, for the same reason, there is an advantage in always producing cloth.

Ricardo's conclusion, which would require Portugal only to produce wine, is incorrect, at least in this first case. It is necessary to say that it is a very probable case, considering that the productivity for industrial commodities such as cloth is generally superior to the production for agricultural commodities such as wine (see par. 21).

The second case presents the descending series .

wp = wine in Portugal
cp = cloth in Portugal
ce = cloth in England.
we = wine in England

Repeating the reasoning from the first case, we may conclude that, every country having to pursue the realisation of its most productive activity, there is an advantage for

Portugal to produce only wine and there is an advantage for England to produce only cloth.

In the second case, Ricardo's conclusion is quite true. But we are dealing with a particular case when wine in Portugal presents a superior productivity to that of cloth in Portugal, so it is superior to the productivity of cloth in England [1]

It is not the comparative superiority that decides in

[1] It is interesting to notice that the falsity of Ricardo's conclusions has been proved by Pareto, *Handbook of Political Economy* (Paris, Giard, 1927), p 508, with another of Ricardo's examples, which is the same example, but presented under a more general and correct form without useless particularisation

Ricardo takes two workmen, I and II, who can each produce two articles A (hats) and B (shoes)

But I is superior to II, *i e* he produces A (hats) with an advantage of 6/5 or of 1 20 (thus 20%) compared with II, and he produces B (shoes) with an advantage of 4/3 or 1 33 (thus 33%), compared with II

Ricardo concludes that for both workmen working together to realise the maximum of production, it is necessary that workman I should produce only B (shoes) (in which he possesses a larger comparative superiority than II), and that workman II should produce only A (hats) (where he possesses a smaller comparative inferiority than I)

Pareto contests this as the best solution, but without showing which is the best solution, he compares Ricardo's solution with another, chosen arbitrarily—namely, when workmen I and II work each day half of their time on article A and half of their time on article B

He supposes workmen I and II work 60 days If the production of II is a unit of A per day and a unit of B per day, with Ricardo's solution—that is, when I produces in 60 days the article B and II produces in 60 days the article A—we get the following table

	I	II	Total quantities
A	—	60	60 A
B	80	—	80 B

Let us compare this solution with the arbitrary solution of Pareto where the two workmen each work thirty days for each of the articles A and B. Then we get the following table.

	I.	II	Total quantities
A	36	30	66 A
B	40	30	70 B

In all we get a production of 66 A + 70 B

This production is not necessarily smaller than the alleged best production of Ricardo, which amounts to 60 A + 80 B.

Indeed, for the latter to outweigh the other, the difference 10 B — 6 A must be positive or

$$10\,B > 6\,A,$$

and this is possible, but it does not necessarily follow

Pareto is right when he concludes that Ricardo does not reason correctly, and that his solution is not always the best

But even though 10 $B < 6\,A$, and Pareto's solution (half and half) is superior to Ricardo's best solution, Pareto's solutions are not the best

Our full discussion of this famous Portugal–England example exempts

favour of Ricardo's solution, but the greater productivity in the production of wine in Portugal.

The third case presents the descending series

wp wine in Portugal

we or *cp* wine in England or cloth in Portugal

ce cloth in England.

We must note that, the position of *we* and *cp* in relation to one another being indifferent (as will be seen), we have been able to join the two elements in a single case

Repeating our reasoning for the first and the second cases, we may conclude that there is an advantage for Portugal to produce only wine and for England also to produce only wine ! !

Once more Ricardo's conclusion is not true The case is not even probable in concrete reality (England must produce

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us from repeating the same reasonings It depends on the way the productivities, corresponding to the four articles

A produced by I,
B produced by I,
A produced by II,
B produced by II,

succeed one another to decide which solution leads to the greatest production in every possible arrangement of these four values

What is decisive for the different hypotheses is the proportion between *A* and *B* from which proceed the proportion between 1 20 *A* and 1 33 *B*

The four values which represent the productivity degrees (*A*,*B*, 1 20 *A*, 1 33 *B*) are classified one after the other, according to the proportion existing between them

The result of the discussion, which in every way follows the classical example, is the following

First case · $A > \frac{1\ 33}{1\cdot 20} B$

In this case workmen I and II must both produce only article *A*
The sum of their production, which is greatest, represents . 132 *A*.

Second case $\frac{1\ 33}{1\ 20} B > A > B$

In this case workman I produces only *B* and workman II only *A*
Their total production—which is greatest—represents 60 *A* + 80 *B*
This is the case in which Ricardo is right

Third case : $A < B$

Here workmen I and II must both produce article *B*
Their total production—which is greatest—represents 140 *B*

It is worth noticing that the maximum is never (in no hypothesis) based on the production of both articles at the same time by one workman
The maximum always comes from an exclusive solution, each workman producing a certain article and no other

only wine !), but it remains that Ricardo's conclusion has a very limited scope of application [1]

(46) Therefore, for Ricardo's conclusion to be valid—that is, for a country to have an advantage in producing only one kind of goods—it is not sufficient for it to possess in this production a comparative advantage over another kind of goods. The productivity which corresponds to this other kind of goods would need to be included in the utmost productivity which corresponds to the first kind [2]

In Ricardo's example the superiority of Portugal in the production of wine compared with England is 120 : 80 = 1·50 (thus 50%), and the superiority of Portugal in the production of cloth compared with England is 100 90 = 1·11 (thus 11%) It is not sufficient that the superiority of wine (50%) is greater than the superiority of cloth (11%) for the country which possesses this first superiority to devote itself to the exclusive production of wine with any great advantage.

[1] At first sight one might envisage a fourth case based on a descending series

cp = cloth in Portugal
wp = wine in Portugal
we = wine in England.
ce = cloth in England

But this case cannot be included in Ricardo's hypothesis, according to which the relative advantage of Portugal is greater in the production of cloth

But according to the above descending series the proportion of the productivities *cp* · *ce* (so the relative advantage of cloth) is necessarily greater than the productivity proportion *wp* *we*, and this is contrary to Ricardo's hypothesis This case cannot therefore be taken into consideration

M Bickel (*op cit*, p 83), poses a very subtle problem in supposing that Ricardo was influenced by the money theory which he was developing at the same time as his theory of relative costs of production, and that the former is implicitly included in the famous example

Indeed, according to Ricardo, gold is distributed between Portugal and England according to the necessities of trade English exports requiring much gold leads to a general fall of prices in England This fall affects the price of English cloth, and for Portugal it is more advantageous to import the cloth rather than to produce it

In this case we get $ce < cp$, and we find ourselves in what we called " the second case," the only one in which Ricardo is right It is the only case where there is a coincidence between comparative superiority and superior productivity As we have already shown, the exactness of this case must not lead us to deduce that it is comparative superiority that decides the advantage of international trade.

On the contrary, superior productivity does so, since as soon as it disappears, comparative superiority alone cannot secure the advantage of international trade

[2] This conclusion and those which follow will be met with again in more precise form at the end of the second demonstration (see par 61).

Indeed, one might easily imagine, on the basis of similar relative superiorities, 50% and 11%, other concrete figures, which would render Ricardo's conclusion of no validity.

If, for instance, for wine production in Portugal and England, the same figures of 80 and 120 workmen are taken, but for cloth production in Portugal or England instead of 90 and 100 workmen respectively, 63 and 70 workmen are taken, then the superiority of Portugal in wine over against England is the same $120 : 80 = 1{\cdot}50$ (50%), and the superiority of Portugal in cloth compared to England is always the same $70 : 63 = 1{\cdot}11$ (11%).

And yet Ricardo's conclusion is no longer valid, since the productivities of the four kinds of goods follow a descending series : *cp*, *ce*, *wp*, *we*

Here we are once more in the " first case," and the consequence is that instead of advocating the advantage to Portugal of producing only wine, and to England of producing only cloth (as in the second case), both countries are recommended to produce cloth at the same time !

(47) Ricardo's conclusion, therefore, as to comparative superiority is valid in a single case—the " second case "—that is, when comparative superiority in the production of wine in Portugal is doubled with an absolute superiority in the production of wine in Portugal over all other productions in both countries, and with an absolute inferiority in the productivity of wine in England compared with all other productions in both countries. The law of comparative advantage or disadvantage is exact only when comparative advantage or disadvantage is accompanied by a superiority or an inferiority in the production of the respective goods.

That, neither more nor less, means that Ricardo's law is inexact.

Everything essential and praiseworthy in it disappears. Nothing but absolute productivity is decisive, and will always be our fixed point of orientation in the labyrinth of exchange analysis [1]

[1] Mr Loria examines the consequences of retaining the admissibility of Ricardo's theory

We consider Ricardo's theory is only admissible for the case we called number two (p 84), viz when Portuguese wine has a superior produc-

(48) Yet, in spite of all we have said, the particular case when Ricardo's conclusion is true contains the germ of a great principle Ricardo understood the importance of concentrating the activity of a nation on the most profitable production Only, he wrongly held that it was necessary to concentrate upon activities in which a comparative superiority compared with foreign countries is to be found, while we have shown that one should concentrate upon the activity which presents the largest absolute productivity.

Our conclusion is therefore the following: If a country (like Portugal) produces two different kinds of goods with two very different degrees of productivity, it is profitable to renounce producing the goods which have a small productivity, in order to produce only the goods which have a larger productivity, even if the first kind is produced under superior conditions abroad

Here is a completely opposite idea to Ricardo's Indeed, according to Ricardo, when a country produces two kinds of goods, both under more advantageous conditions than abroad, but the first having a comparatively greater advantage than the second, the first should always be produced.

According to us, the comparative superiority of each of the

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tivity to cloth, or, inversely, English cloth has a superior productivity to wine, and that in all other cases the comparative advantage in the production of wine which Portugal has over England does not justify Portugal in producing only wine to pay for the cloth imported from England

Regarding this, Mr Loria remarks, and he is apparently right, that in this case, neither of the two countries would produce wine, which is, however, a necessary production

We are sorry, but we are obliged to contradict Mr Loria in this case also We showed very clearly, in the chapter on the consequences of our theory, that a country must decrease, as much as possible, its foreign trade when it is formed by the export of goods of small productivity in exchange for goods of high productivity, and, on the contrary, that it must try to satisfy all its home necessities for goods of high productivity by home production

This means that if it is established that the production of wine has a small productivity, we must recommend Portugal *to diminish the production, not altogether, but by that quantity which is necessary to pay for the imports of English cloth* In this case, where the labourers are out of work because of the smaller wine production (for the productivity of cloth is greater), only a part of them will find employment in the production of cloth necessary for Portugal, and the other part will be free for other occupations of national economy

Who could stop Portugal from having such a policy which is the best one for it?

two kinds of goods in the foreign country is of no importance [1] Goods with a large comparative advantage in relation to the foreign country should not be produced, but the goods which, under the conditions of home production, have a greater absolute productivity should be produced. So it is upon the most absolute productive activities that national effort should be concentrated.

But this, which might be called the rule of the concentration of national activity in the domain of the greatest productivity, is most beneficial to industrial activity, and not, as it seems to be set out in Ricardo's absurd example, to agricultural activity

(49) With this observation, we come to the second part of our criticism, that of the likelihood of Ricardo's example (see 42). True the exact classification of the four productions of Ricardo's example, according to their degree of productivity,

[1] The idea of facility and its negative corresponding idea of sacrifice have very much confused discussions about value and exchange

Goods produced easily and goods produced "with sacrifice" are always spoken of.

According to us, there is only one measure for appreciating the national interest presented by certain goods It is neither facility nor sacrifice For it is with such ideas that attempts are made to compare the production of the *same* kind of goods in different countries Well, this comparison is neither decisive nor even interesting to us

It is a matter of indifference to a country to know whether certain goods are produced more or less easily abroad than at home The only important thing is to know what is the degree of productivity of the creation of these goods at home, or (if they have to be imported) what is the degree of productivity of the goods which must be produced instead of the first kind, for exchange (see par 36)

From the comparison of two purely internal operations, the case for production in the country or for import should be decided

Moreover, it is the only right way of thinking In order to know whether we profit or we lose, both hypotheses must be compared from the point of view only of a national result

What goes on abroad, how they produce, with what profit and productivity is a matter of indifference The comparison of relative facility and sacrifice of two countries in the production of the same goods need not directly be taken into account, because goods "easily" produced abroad may become cheaper and be bought with home merchandise of a smaller productivity

But what are important for the economics of a country, what have really to be compared, are two possibilities and two hypotheses within the framework of the same country To consider what is going on abroad uselessly complicates the problem.

Foreign countries may produce certain goods more easily than ourselves, even for nothing What is important for us is the price foreign countries ask and whether it is possible for us to pay with other goods of a greater productivity, instead of producing the first goods at home, since this would require less productivity

ought, in view of the great productivity of such industrial articles as cloth to be the following :

ce = cloth in England,
cp = cloth in Portugal,
wp = wine in Portugal,
we = wine in England,

and the logical conclusion is that, for England, as for Portugal, the most productive activity is the manufacture of cloth. Ricardo's hypothesis, which admits the superiority of Portugal compared with England in the production of a strictly industrial article like cloth, is far from the economic and historic reality The absurdity of this hypothesis would have no consequence if no one's mind were influenced by the resultant conclusion and if public opinion were not left with the idea that the production of wine—that is, to say of an agricultural commodity for which one country is better provided than another, is the one which must absorb all the efforts of the nation.

" Leave agricultural countries to their agriculture," seems to be the conclusion which—born of an absurd example, endeavours to insinuate itself in the mind [1]

[1] Our ample criticism of Ricardo's example exempts us from analysing here other examples of international trade which do not lead to any essential change in the elements of such trade and although they may often be found in the writings of other economists

Such is John Stuart Mill's example (Chap XVII, p 391)

" England has, compared with Sweden, an advantage of 50% in cottons and an advantage of 25% in iron

" It may be to our advantage to procure iron from Sweden in exchange for cottons, even though the mines of England, as well as her manufactories, should be more productive than those of Sweden, for if we have an advantage of one-half in cottons and only an advantage of a quarter in iron, and could sell our cottons to Sweden at the price Sweden must pay for them if she produced them herself, we should obtain our iron with an advantage of one-half (50%) as well as our cottons "

Just as in Ricardo's example the conclusion is true in the particular case where the productivities corresponding to the four productions are classified in the following manner

Cottons in England
Iron in England
Iron in Sweden
Cottons in Sweden

This example of Mill has, however, in its exposition, an incontestable superiority over Ricardo's example For it contains only the real elements of the problem (the data of the problem, as we say in mathematics), and introduces no particular or foreign elements (see p 843) to complicate the conclusions

CHAPTER III

THEORY OF INTERNATIONAL TRADE

Second Revision.

(50) Our criticism of Ricardo's theory and example, while adding to the construction of our theory of productivity, might bear the reproach of being too indirect Most readers are more easily convinced by objections to a theory made by adopting and gradually pursuing the development of its demonstrations, than by new systems freshly built up, even where these systems are irreproachably logical.

We shall therefore make use of a second method for the criticism of our theory of comparative advantages, and we hope that the light it will throw upon new points will make up for the tedium of what may seem a repetition.

We shall faithfully pursue the Ricardian method and correct it by introducing, at the favourable moment, those modifications which, in our opinion, are indispensable

We must remind ourselves that in Ricardo's example Portugal produces a quantity of wine *Ew* with the labour of 80 workmen during one year, and England produces the *same quantity* with the labour of 120 workmen

In the same time Portugal produces a quantity *Ec* of cloth with the work of 90 workmen, while England produces the *same quantity* with the labour of 100 workmen

These are the only essential and necessary data of the problem They contain three elements

(*a*) Advantage of Portugal over England in wine production (120 · 80 = 1·50, so 50%).

(*b*) Advantage of Portugal over England in cloth production (100 90 = 1·11, so 11%).

(*c*) Comparative advantage of Portugal over England for wine compared with cloth (50% and 11%)

The conclusion of Ricardo's analysis is that Portugal should only produce wine, England only cloth, and that both countries should exchange these two forms of merchandise in order to satisfy their respective necessities.

(51) Let us first examine Portugal's situation

Portugal may get the cloth it requires by commercial (indirect) means or by industrial (direct) means

Why should Portugal, according to Ricardo, only produce wine and procure cloth merely by commercial (indirect) means? Because by producing wine it may obtain, *with the same productive forces*, more cloth than it obtains by producing it directly.

(i) Indeed, by producing with 80 Portuguese (during one year) a quantity *Ew* of wine, Portugal may export this quantity to England in order to procure cloth.

(ii) The exchange of wine for cloth in England is done, according to Ricardo's principle, *on the exclusive basis of the amount of labour contained in the goods produced in the same country* (equal labour for equal labour.)[1] This is the weak point which undermines the final conclusion

Now as the quantity of wine *Ew*, produced in England, represents the labour of 120 Englishmen, and the quantity of cloth *Ec* produced in England represents the labour of 100 Englishmen, it follows that the quantity of wine, *Ew* is exchanged for a quantity of cloth $\frac{120}{100} Ec$

(For the quantity of wine, *Ew* contains the labour of 120

[1] In order to justify the interpretation that we have always given to the theory of Ricardo, according to which the exchange of two merchandises in the same country is made exclusively according to the quantity of labour they embody, we base ourselves also upon the authority of John Stuart Mill in the example given by him in Chapter XVII, p 391 (*op cit*) of the exchange between England and Poland

He supposes that a certain quantity of cloth is produced with 150 days of work in England and 100 days in Poland, and a certain quantity of cereals is produced with 200 days in England and with 100 days in Poland, and he admits that " with a quantity of cloth that England produces with 150 days of work it would be able to buy as much cereal in Poland as would there have been produced with 100 days, etc " That is to say that the produce of work of 100 Polish workers in cloth (which is equal to the produce of work of 150 English workers in cloth) is necessarily equal to the produce of work of 100 Polish workers in cereals

Englishmen, and the quantity $\frac{120}{100} Ec$ of cloth contains also the labour of 120 Englishmen)

(iii) So with the work of 80 Portuguese one may procure in England, by means of international trade, a quantity $\frac{120}{100} Ec$ of cloth

If the cloth had been produced in Portugal, seeing that 90 Portuguese produce the quantity Ec of cloth, the labour of 80 Portuguese would have produced $\frac{80}{90} Ec$

(iv) So, by commercial (indirect) means (producing wine in Portugal in order to buy cloth in England) 80 Portuguese produce the quantity $\frac{120}{100} Ec$ of cloth, while by industrial (direct) means (producing the cloth in Portugal) the 80 Portuguese produce the quantity $\frac{80}{90} Ec$ of cloth

The proportion between the indirect production and the direct production is :

$$\frac{120}{100} \quad \frac{80}{90} = 1{\cdot}35,$$

so in buying English cloth instead of producing cloth in Portugal, that country has—with the same amount of labour—an excess of cloth of 35%

The proportion which represents this excess is :

$$\frac{120}{80} \quad \frac{100}{90} = 1{\cdot}50 \cdot 1{\cdot}11 = 1{\cdot}35,$$

so it is the quotient between the proportion which determines the advantage of Portugal over England in the production of wine and the proportion which determines its advantage in the production of cloth [1]

Now the quotient of the two proportions of advantage 1·50 1·11 determines *the degree of comparative advantage* of

[1] It is essential to retain—for clearness of the solutions employed—this definition the degree of comparative superiority in the production of a merchandise over against another is the quota between the ratio which defines the superiority in the production of the first and the ratio defining the superiority in the production of the second.

Portugal in the production of wine over the production of cloth

(52) According to Ricardo, we may conclude :

(i) If, compared with abroad, a country has an advantage in the production of an article and a greater advantage in the production of another article, that country profits by importing the first article from abroad and paying for it with the export of the second article, instead of producing it at home

(ii) The excess of production (or the degree of economy of productive forces, which is the same thing), realised by this country through international exchange is exactly equal to the degree of comparative advantage it has in the production of the exported compared with the imported goods It is the concrete and visible profit of international trade.

Nothing is more fascinating than Ricardo's conclusion presented in this manner, with its mathematical clearness ! Unhappily—as we shall see later on—it is not true because the whole construction of Ricardo's theory is wrong

(53) But before reaching this point in our examination, it is necessary to analyse England's situation according to Ricardo

Why should England only produce cloth and obtain wine by commercial (indirect) means? Because by producing cloth it may obtain, with the same productive forces, more wine than by producing it directly.

(i) Indeed, by producing with 100 English workmen (during one year) a quantity, *Ec*, of cloth, England may export this quantity to Portugal in exchange for wine

(ii) The exchange of cloth for wine in Portugal is made according to Ricardo's principle, on the exclusive basis of the amount of labour contained in the goods produced in the same country (equal labour for equal labour).

Now the quantity *Ec* produced in Portugal containing the labour of 90 Portuguese, and the quantity *Aw* of wine, the labour of 80 Portuguese, produced in Portugal means that a quantity of cloth *Ec* is exchanged for a quantity of wine $\frac{90}{80}$ *Ew* still the labour of 90 Portuguese.

(iii) So with the labour of 100 English workmen one may procure from Portugal, by means of international trade, a quantity $\frac{90}{80} Ew$ of wine.

Had the wine been produced in England, seeing that 120 Englishmen produce the quantity Ew, the labour of 100 Englishmen would have produced a quantity $\frac{100}{120} Ew$ of wine

(iv) So by commercial (indirect) means (producing cloth in order to buy wine abroad) 100 Englishmen produce the quantity Ew of wine $\frac{90}{80}$, while by industrial (direct) means (producing the wine in England) 100 Englishmen produce the quantity $\frac{100}{120} Ew$ of wine

The proportion between the direct and the indirect production is

$$\frac{90}{80} \quad \frac{100}{120} = 1{\cdot}35,$$

so that in England, with the same amount of labour, an advantage of 35% is obtained.

The proportion this excess represents is 1·35, and it is composed of:

$$\frac{90}{100} \quad \frac{80}{120} = 0{\cdot}90 \cdot 0{\cdot}67 = 1{\cdot}35,$$

so it is the quotient between the proportion which determines the inferiority of England in the production of wine as well as the proportion which determines its own inferiority in the production of wine [1]

Now the quotient of these two proportions of inferiority 0·90 0·67 determines the degree of England's comparative inferiority in the production of wine compared with the production of cloth

[1] Let us retain the definition · the degree of inferiority comparative in the production of a merchandise over against another is the quota between the ratio which defines the inferiority in the production of the first and the ratio defining the inferiority in the production of the second

(54) We may therefore conclude, according to Ricardo

(i) If, compared with abroad, a country presents an inferiority in the production of an article and another comparatively greater inferiority in the production of another article, that country profits by importing the second article from abroad and paying for it with the export of the first article, instead of producing the second article at home.

(ii) The excess of production (or the degree of productive forces) which this country realises through international exchange is exactly equal to the degree of comparative inferiority it has in the production of the imported, compared to the exported goods. That is its international trade profit.

What is so remarkable is that, according to Ricardo's theory, the two exchanging countries effect at the same time an economy of their productive force

The free-traders of Ricardo's school are therefore quite consistent when they state that international trade is profitable at the same time to both countries engaged in it

(55) But all this very logical construction rests, unhappily, on thoroughly false premisses—namely, the hypothesis that goods are exchanged in the interior trade of a country according to the rule equal labour for equal labour. (See also par 41)

From this hypothesis we have been led to suppose that a quantity of wine may be exchanged in the same country (first in England, then in Portugal) for a quantity of cloth such as to assume strictly equal quantities of labour

Nothing is more inexact than this hypothesis.

We have, moreover, shown (see note par 41) that Ricardo himself did not support it in the theoretical part of his work, merely slipping it into the framework of this example, by making, unfortunately, this assumption the basis of the theory of comparative costs of production.

Economic reality is quite different. The quality of labour and of other factors of production—especially of capital absorbed in production—so influence the productivity of human labour that the exchange value of different goods,

created by units of labour, is exceedingly different (see par 16 and corresponding tables)

So, even in a country's interior trade, goods are far from being exchanged according to the amount of labour they contain, but are exchanged according to the quantities and the productivity of this labour (See par. 43)

If Q and q be the quantities of labour included in the two kinds of goods, and if P and p are their respective productivities when these goods have the same exchange value, we always get . $QP = qp$

The produce of the labour of 100 unskilled workmen may be exchanged for the produce of the labour of fifty, twenty-five, ten or even five skilled workmen backed by a large mechanical plant, so that the productivity of these five is two, four, ten or even twenty times as great as the productivity of the first workmen

So in our example, Ricardo's great mistake is to have considered at point (11), that in Portugal or England cloth is exchanged for wine, and wine for cloth, in such a way that the quantities exchanged contain the same amount of labour.

(56) Let us now suppose that the productivity of labour in cloth should, in Portugal, be double the productivity of labour in wine, so that wine and cloth could be exchanged in such a proportion that the labour of one workman in cloth could be exchanged for the labour of two workmen in wine

In this case, at point (11) of the examination of Portugal's situation (see par. 51) the quantity of wine Qw is no more exchanged in England for a quantity of cloth $\frac{120}{100} Qc$, but for the *half* of it : $\frac{1}{2}\frac{120}{100} Qc$

The final result is that for Portugal the proportion between indirect production by trade (production of wine in Portugal in order to buy cloth in England) and the direct production by industry (production of cloth in Portugal) is ·

$$\frac{1}{2}\frac{120}{100} : \frac{80}{90} = \frac{1}{2}\frac{120}{80} \cdot \frac{100}{90}\frac{1}{2} \quad (1\ 50 \quad 1\ 11) = \frac{1}{2}\,1{\cdot}35 = 0\ 675.$$

Theoretic Scheme [1]

(59) We are now going to repeat our argument on a strictly theoretical plan, in order to express general formulæ in mathematical language and to give general rules on international trade in ordinary language

Let A be an agricultural country [2] and I an industrial country. Each of these two countries produces an agricultural article and an industrial article

(1) Let us suppose a quantity Q of the agricultural article is produced by 100 workmen in A and by 100 q workmen in I. If for the production of the same quantity of Q, 100 workmen are needed in the one country and 100 q in the other, the

[1] Bickel, *op cit* p 95 From the interpretation of the theory of comparative costs of production a number of errors arise For instance, in the work of Bickel (*op cit*) it is assumed that

$a1$ is the cost of production of article 1 in country A,

$a2$ is the cost of production of article 2 in the same country,

$b1$ is the cost of article 1 in country B,

$b2$ is the cost of article 2 in the same country,

then the change takes place if $a1 - a2 \gtrless b1 - b2$ The error is evident It is not the differences of cost which are decisive It is the ratio of costs The equation is $\frac{a1}{a2} \gtrless \frac{b1}{b2}$ which, according to the solutions of our theory, gives $q \gtrless q1$

But this is not the only error Bickel gives, as example of the truth of the law of relative cost, the case of Australia, which, after the discovery of its gold mines, had renounced all other production in order to buy all she needed with the production of gold

Here a *coincidence* adds to the confusion Australia restricted her production to gold, not because gold represents comparatively the most advantageous production, but the most advantageous from the *absolute* point of view The production of gold represents a productivity infinitely greater than the productivity of all other merchandise If, instead of gold, Australia had developed great forests, would she have confined herself solely to timber production?

[2] We have supposed an agricultural country exchanging with an industrial country, and the industrial article superior in productivity to the agricultural article

These hypotheses are not essential The problem as we put it is a general one

No matter what the character of these two exchanging countries, and no matter what the article with a superior productivity might be, the theoretical conclusions we shall come to in the end do not change

If, nevertheless, we have introduced these particularities which have no part in the basis of our reasoning, it is that they give a more concrete character to our example and correspond to a great number of cases in real international trade In fact, the most interesting case in international trade, and that which puts in the most categoric manner the problem of opposition of interests, is that of exchange relations between an agricultural and an industrial country On the other hand, in general agricultural productivity is plainly inferior to industrial productivity (see par 21).

ratio q expresses the superiority or the inferiority of country A over country I in the production of the agricultural article Q.

If $q > 1$ (as in Ricardo's hypothesis), there is superiority, as, for the same quantity Q in the industrial country the labour of a larger number of workmen is required than in the agricultural country A

If $q < 1$, there is inferiority, the case is inverted

(ii) Let us suppose that a quantity $Q1$ of the industrial article is produced by 100 workmen in A and by 100 $q1$ workmen in I

The ratio $q1$ expresses—as above—the superiority or the inferiority of country A over country B in the production of the industrial article $Q1$

If $q1 > 1$ (as in Ricardo's hypothesis), then there is superiority · if $q1 < 1$ there is inferiority

Let us suppose that the comparative superiority of the agricultural country is on the side of the agricultural article Then we get $q > q1$

The inequalities $q > q1 > 1$ sum up perfectly the data of the comparative superiority of agricultural country A in the production of the agricultural article

The agricultural country A is superior to industrial country I both in the agricultural and in the industrial article, but it has a comparatively larger superiority in respect of the agricultural article.

Here, then is a very likely case.

(60) The problem is to know whether the agricultural country has any advantage in producing only the agricultural article in order to buy with it the industrial article from the industrial country, or whether it has an advantage in producing the industrial article itself.

Let K be the ratio of productivities between the industrial and the agricultural article *in the industrial country*.

(i) In producing the quantity Q of the agricultural article with 100 workmen during a year, A may export this quantity to I in exchange for the industrial article.

(ii) In I, the exchange of the agricultural article for the

industrial article is done on the basis of the amount of labour contained in those articles and of the productivity of this labour

In our case every industrial workman counts as K agricultural workmen (the ratio of productivities being K),[1] so 100 q_1 industrial workmen count as 100 Kq_1 agricultural workmen

It follows that the quantity Q of the agricultural article (which, in the industrial country I, is produced by 100 q agricultural workmen) may be exchanged for the quantity $\frac{1}{K}\frac{q}{q_1}Q_1$ of the industrial article

(iii) So with the labour of 100 workmen in A one may procure, by means of international trading, a quantity $\frac{1}{K}\frac{q}{q_1}Q_1$ of the industrial article.

If this article had been produced in the agricultural country A, the labour of 100 workmen from A would have produced the quantity Q_1 of the industrial article

(iv) So by indirect commercial means (producing the agricultural article in the agricultural country A), in order to buy the industrial article in the industrial country I, 100 workmen in A produce an amount $\frac{1}{K}\frac{q}{q_1}Q_1$ of the industrial

[1] We have considered the ratios K (see further, par 69) and K' of the productivities of the agricultural article and the industrial article, as ratios characterising the strictly internal economic equilibrium in the industrial country and in the agricultural country

In other words, in our "second demonstration" we considered first the equilibrium of prices in two exchanging countries before the beginning of a commerce between them

Nothing will be changed in our demonstration if, in place of considering the economic equilibrium established before the international exchange, we consider the economic equilibrium which will be established after the exchange has taken place—that is to say, a general equilibrium based on world prices

The difference of productivity between industry and agriculture remains considerable both within the limits of world prices and of the general equilibrium to which they attain

Moreover, it is this real difference, which we have considered in our statistical studies (see par 16), which preceded the development of the theory.

The two ratios K and K' differ in two different countries, but they show the great deviations between the productivities

The scale of productivity is very wide, no matter what the character of a country (see the tables of productivities in America, Holland, Roumania, Bulgaria in par. 16).

article, while by direct means (producing the industrial article in the agricultural country A) the 100 workmen in A produce a quantity Q_1 of the industrial article

The ratio between indirect production (by trading) and direct production obtained with the same amount of labour is $\frac{1}{K}\frac{q}{q_1}$ If this ratio is greater than unity, *i e.* if $\frac{1}{K}\frac{q}{q_1} > 1$ or $\frac{q}{q_1} > K$ the trading solution is preferable to direct production [1]

(61) Now the ratio $\frac{q}{q_1}$ is the quotient of the two ratios of superiority, and this quotient defines (see notes, pars 51 and 53) the comparative superiority, and the coefficient K is the ratio between the productivity of the industrial article and the productivity of the agricultural article in country I We may call it *the intrinsic superiority or the qualitative superiority of industry compared with agriculture.*

So for the commercial solution (the importation of the industrial article) to be preferable in the agricultural country to the direct production of this article, it is necessary and sufficient for —

$$\frac{\text{The comparative superiority of agriculture}}{\text{The intrinsic (qualitative) superiority of industry}} > 1$$

that means that the comparative superiority in the production of exported goods must be greater than the intrinsic (qualitative) superiority of imported industrial goods.

[1] In the particular case in which there is no comparative advantage, the two coefficients q and q' which represent the advantages in the production of the articles, are equal

We have then $\frac{q}{q} = 1$, so in all cases $\frac{q}{q'} < K$

It is therefore direct production which is preferable to the commercia solution

It is interesting to observe that John Stuart Mill, when considering the division of international trade profits between co-exchanging countries, arrives at the conclusion that in this case there is no exchange, for there is no advantage of exchange for either party

We are not of this opinion, as Mill considers only the commercial profit of the two countries, while we consider the synthetic advantage of commerce and of production (see par 37). Finally we note that in the case in which the two superiorities are equal (as it is easy to show) the productivity of industry compared with that of agriculture is found to be exactly in the same ratio in the industrial country and in the agricultural country, for we have $K = K'$

The general conclusion may be formulated thus

If a country shows a superiority compared with abroad in the production of one kind of goods and a larger comparative superiority in the production of a second kind of goods, it means that it is advantageous for that country to import the first article from abroad instead of producing it at home only when the ratio which expresses the comparative superiority is greater than the coefficient which expresses the intrinsic (qualitative) superiority of the second compared with the first kind of goods [1]

[1] Mr Loria asserts that the productivity, "*del tutto incommensurabile*" of two kinds of goods in the same country is of no importance, but only the productivity "*perfettamente comparabile*" of the same goods in two different countries is important

Our whole work contains figures and demonstrations showing that the productivity of different goods in the same country *may be measured*, and that these productivities *are of the greatest importance for the economist*, chiefly because they determine the advantage or disadvantage in producing or importing certain goods

However, in order to convince Mr Loria, I will give another example taken from concrete reality

According to pre-War American statistics, the pharmaceutical industry showed the highest productivity—namely, a workman produced an average value of $5000 per year

At the same time, Russian agriculture was working with an extremely small productivity, realising an average of $90 per workman per year

What does this mean? When American pharmaceutical products were bought by Russia and paid for with Russian agricultural products, the labour of a workman in the American chemical industry bought the labour of 5000 90 = 55 workmen in Russian agriculture

What is wrong with this concrete example? What is "*incommensurabile*"? The net production of each branch of agriculture or industry may be, as we have showed, evaluated for a certain moment, and in this way it may be also established that the productivity which results represents the net average production per workman

Naturally statistics are always approximate, but no matter how large the approximateness may be, this cannot change the truth that, in international trade, industry buys with the labour of a single workman the labour of many agricultural workmen

It is evident, owing to this fact, that protection is easily justified

No matter how large the eventual inferiority of "higher" industries (such as the chemical or pharmaceutical industry) may be in agricultural countries, *it cannot be so large as to annihilate the disadvantage to these countries to import these articles*

In fact, if we suppose for the mentioned example that Russia desired to put a stop to the disastrous exchange of 1 for 55 and desired to create a home chemical industry, what would happen?

Surely this industry, lacking the natural conditions and the standard of civilisation of America, would be in an inferior position compared with the American industry

What would this inferiority be? At the worst, the same quantity of products produced in America by *one workman* would be produced in Russia by one, two or five workmen In this latter altogether extra-

(62) Now this condition is very difficult to fulfil, and therefore it is very seldom fulfilled

Indeed, industrial products admit of a considerable productivity, on an average one twice as great and even more than the productivity of agricultural products (see par 21) So the intrinsic (qualitative) superiority of industry is twice as great and *even more.*

For the comparative superiority of agriculture to be greater than the intrinsic (qualitative) superiority of industry in the agricultural country, the superiority of agriculture in the agricultural country must be at least as great as the intrinsic superiority of industry, for we have, for the agricultural country compared with the industrial country :—

$$\left.\begin{matrix}\text{Comparative superiority} \\ \text{of agriculture}\end{matrix}\right\} = \frac{\text{Agricultural superiority}}{\text{Industrial superiority}}$$

$$\left.\begin{matrix}\text{Intrinsic (qualitative)} \\ \text{superiority}\end{matrix}\right\} = \frac{\text{Industrial productivity}}{\text{Agricultural productivity}}$$

Therefore we must have :

$$\frac{\text{Agricultural superiority}}{\text{Industrial superiority}} > \frac{\text{Industrial productivity}}{\text{Agricultural productivity}}$$

But industrial superiority being (by definition) represented by a ratio always greater than unity, we must have in any case .

$$\text{agricultural superiority} > \left\{\begin{matrix}\text{industrial productivity} \\ \text{agricultural productivity}\end{matrix}\right.$$

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ordinary case Russian chemical products would be much dearer than the same American goods—that is, they would raise their value five times

And still, for the economics of Russia, even in this case, there would be an advantage, because the goods formerly imported from America, paying for the labour of one American workman with the labour of fifty-five Russian agricultural workmen, could be produced in the country with the labour of five workmen The difference between fifty-five and five workmen remains an immense one, which would fully justify the industrialisation tendency, even under a system of permanent protection

According to this example, and to others given in our book, the determining influence of the difference of productivity in the production of two kinds of goods in the same country may be seen

Mr Loria thinks that the difference of cost of the same goods in different countries has more determining influence

We shall notice that the second productivity is more evident, without much analysis, and this is why it strikes economists of all times The first difference, although more important, is not so easily seen

However, the figures show also the importance of the two differences

Now the superiority of one country over another in the production of certain agricultural articles may not always be in the order of two, three, or four times

It would be quite exceptional for a country to employ a number of workmen, two, three, or four times as great as another country in order to realise the same exchange values in agricultural products !

On the contrary, there is nothing exceptional (see par 21) for the productivity of an industrial article to be two, three, four, and even ten times as great as the corresponding productivity of an agricultural article

So it is rather difficult and rather rare to find the condition formulated above fulfilled.

In consequence, if an agricultural country happens to be placed in the position we have just defined, there is very little likelihood that the commercial solution will be more advantageous than direct industrial production

(63) The ratio of industrial and agricultural productivity may justly be described as the intrinsic (qualitative) superiority of industry over agriculture, since this ratio, in spite of its variations, is fairly constant in international exchange, and since it represents in some measure a general characterisation of these activities for humanity

Therefore, for international trade to outweigh home production, for it to be advantageous for an agricultural country not to produce an industrial article but to buy it abroad, paying for it with agricultural produce, it is necessary that the comparative superiority of agriculture in the agricultural country should be greater than the intrinsic (qualitative) superiority of industry over agriculture.

From this general conclusion we shall make many deductions.

(64) Let us pursue the examination of the theoretic case. We have examined up to now whether an agricultural country profits by producing only agricultural articles when it has comparative superiority in buying with these industrial articles from an industrial country.

We have come to the conclusion that in most cases the second alternative is the most advantageous, and we have managed to state precisely *a rule* which recognises the existence and the importance of this advantage in every case.

Now we regard the situation from the point of view of the industrial country, and query whether an industrial country has an advantage in producing only industrial articles, the production of which has a smaller comparative disadvantage, in order to buy with these agricultural articles from an agricultural country, or whether it has an advantage in producing the agricultural articles itself.

Let us reason as we have already done

(i) The industrial country I, in producing the quantity Q_1 of industrial produce with 100 workmen during a year, may export this quantity to A in order to exchange it for agricultural produce

(ii) The exchange of the agricultural article for the industrial article is made on the basis of the amount of labour contained in these articles and of its productivity.

In our case every industrial workman counts as K' agricultural workmen, so 100 industrial workmen count as 100 K' agricultural workmen

It follows that the quantity Q_1 of the industrial article (produced by 100 agricultural workmen in the agricultural country A) may be exchanged for the quantity $K'Q$ of the industrial article.

(iii) So by the labour of 100 q_1 workmen in I, a quantity $K'Q$ of the agricultural article is obtained through international trading

If this agricultural article had been produced in the industrial country (since 100 workmen produce the quantity Q) 100 q_1 workmen would have produced the quantity $\frac{q_1}{q} Q$.

(iv) So by commercial means (producing the industrial article in the industrial country in order to buy the agricultural article in the agricultural country) 100 q_1 workmen would have provided the quantity $K'Q$ of the agricultural article, while by direct means (producing the agricultural

article in the industrial country *I*) 100 q_1 workmen would have produced the quantity $\frac{q_1}{q} Q$ of the agricultural article.

The ratio between indirect production (by trading) and direct production is $K' \frac{q}{q_1}$. If this ratio is greater than unity, the commercial solution is preferable to direct production Well, this ratio $\frac{q}{q_1}$ is always greater than unity, because it expresses the comparative superiority of the agricultural country for agricultural produce (we had $q > q_1$), and K' is always greater than unity because it represents the ratio between industrial productivity and agricultural productivity (what we have called absolute superiority of industry) So $K' \frac{q}{q_1}$ is always greater than unity, so for the industrial country the commercial solution is preferable to direct agricultural production

The ratio which expresses the advantage of commercial exchange $\frac{q}{q_1} K'$ represents, according to the definitions we have already stated, the produce of the comparative superiority of agriculture in the agricultural country and the intrinsic (qualitative) superiority of industry in the industrial country.

(65) It is interesting to notice that if $K = K' = 1$—that is, if the agricultural article has the same productivity as the industrial article, and *there is no absolute superiority of industry*—in this case the advantage of the agricultural country in producing only the agricultural article is represented by $\frac{oq}{q_1}$, and the advantage of the industrial country in producing only the industrial article is still represented by $\frac{q}{q_1}$. Both countries have profited by confining themselves to their "natural" productions. This is the only instance in which Ricardo is right.

But as soon as there intervenes a difference of productivities in favour of industry, a difference represented by the coefficients K and K', both the advantages we have already noted are different

The advantage of the agricultural country in producing only the agricultural article decreases in becoming $\frac{1}{K}\frac{q}{q_1}$ (becoming a disadvantage as soon as $\frac{1}{K}\frac{q}{q_1} < 1$), while the advantage of the industrial country in producing only the industrial article increases $\left(\text{becoming } \frac{K'q}{q_1}\right)$ and the $\frac{q}{q_1}$ coefficients K and K' not being too different (see note in par 60), the two coefficients $\frac{1}{K}\frac{q}{q}$, and $K'\frac{q}{q}$, which represent the advantage (or the disadvantage) of a policy of international exchange compared with a policy of production *are about in inverse ratio*

When the intrinsic (qualitative) superiority of industry compared with agriculture (represented by K in the industrial country and by K' in the agricultural country) *increases, the disadvantage of the commercial solution* (export of agricultural articles against import of industrial articles) *gradually increases for agricultural countries, while the advantage of the commercial solution for industrial countries* (export of industrial articles against import of agricultural articles) *gradually increases in about the same proportion*

What the agricultural country loses is gained by the industrial country The contrast and the distance between the disadvantage of the first and the advantage of the second depend on the value of K and K'—that is on the intrinsic (qualitative) superiority of industry compared with agriculture

When this absolute superiority of industry becomes more accentuated, the contrast is greater, when the superiority decreases, the contrast is less, when it does not exist, the contrast disappears and agricultural countries reap the same benefit from exchange as industrial countries.

(66) We have up to now examined only the case when an

agricultural country has a *double superiority* over the industrial country, both in agricultural and industrial produce

This is the classical case of comparative advantage continually speculated upon since Ricardo But there is another very interesting and far more frequent case *it is when an agricultural country, being superior to the industrial country for agricultural produce, is inferior for industrial produce*

This case has not been sufficiently studied. It is easy to understand why. Since the advantage of international trade over home production has been proved (or was thought to have been proved) when a country presents a comparative superiority for exports compared with imports, it will be *a fortiori* valid when a country presents a superiority for export goods and an inferiority for import goods compared with abroad The case with which we wish to deal is therefore *settled beforehand*, by the solution given to the classical case (see also note, par. 38).

But what may be done by classical writers is denied to us.

For we have successfully shown that the classical case of comparative advantage cannot be settled by proclaiming, without any restriction and under any conditions, the advantage of exchange We have proved, on the contrary, that the solution of direct production nearly always outweighs the commercial solution

We may therefore ask this question : Is it not possible that the solution of direct production of the industrial article in the agricultural country might outweigh the production of the industrial article in certain cases of absolute inferiority?

(67) In this case the development of our theoretic demonstration and the conclusion we have drawn remain the same

Indeed, the ratio between indirect production (production of the agricultural article in the agricultural country in order to buy the industrial article in the industrial country) and direct production (production of the industrial article in the agricultural country) is still $\frac{1}{K}\frac{q}{q_1}$.

There is only one thing that is changed It is that q_1 is smaller than unity because for the production of the quantity Q_1 of the industrial article, the inferiority of the agricultural country is expressed by the use of a number of 100 workmen, and this number is larger than 100 q_1 workmen employed by the industrial country This is summed up in the formula :

$$Q_1 < 1 < q$$

For indirect production by commercial means to be more advantageous than direct production we must have :

$$\frac{1}{K}\frac{q}{q_1} > 1 \text{ so that } \frac{q}{q_1} > K,$$

but since $q_1 < 1$ and $q > L$ the ratio $\frac{q}{q_1}$ is much larger in the case of the comparative advantage we have just had. It follows that there are more chances than in the preceding case for the commercial solution to be the most profitable, because even with a larger K, the congruity $\frac{q}{q_1} > K$ may easily be realised.

But if $\frac{q}{q_1} < K$, and this may also happen, the commercial solution is disadvantageous compared with direct production [1]

From the theoretic point of view this is a very interesting conclusion.

There is really no great difference between Ricardo's classical case of the production of an industrial article in an agricultural country with an absolute superiority compared with abroad, but with a lesser comparative superiority compared with agricultural production, and the present case (we may call it Adam Smith's case, see par 58) of the

[1] Let us suppose, in Ricardo's example, that the production of cloth in Portugal, instead of presenting a smaller comparative superiority (100 . 90 = 1·11) compared with the production of wine (120 80 = 1 50), shows a clear inferiority to foreign production, and that 125 producers are employed instead of 90 In this case an absolute inferiority for cloth (100 125 = 0 80) is shown over against an absolute superiority for wine (120 80 = 1·50) And yet, K being equal to 2, the ratio between the commercial and industrial solution is, for Portugal (see par 51), ½ 1 50 0 80 = 0 75 · 0·80 = 0 94 Is the commercial solution 6% below the industrial solution ?

production of this industrial article in the agricultural country with an absolute inferiority compared with abroad, it is merely a question of degree.

In both cases if $\frac{q}{q_1} > K$, the commercial solution is more profitable, and it is better not to produce the industrial article even in the agricultural country.

In both cases, if $\frac{q}{q_1} < K$, direct production is more profitable, and it is better to produce the industrial article even in the agricultural country.

The difference between the two is one of quantity and not quality

In the first case the industry of the agricultural country is superior to the industry of the industrial country (though not to the same degree as the agriculture of the agricultural country is superior to the agriculture of the industrial country), in the second case the industry of the agricultural country is inferior to the industry of the industrial country. Yet, in both cases—which to certain economists seem very distinct and opposed—it may happen, and it often does happen, that the direct production of industrial articles by an agricultural country is more advantageous than their importation

So superiority or inferiority of industry in relation to foreign production is not conclusive [1]

[1] And yet, even writers of the greatest economic repute have not realised this fact On the contrary, they have much insisted upon the great difference which exists between the case of inferiority of an industry compared with abroad, and that of its lesser comparative superiority

Taussig, for instance (*Principles of Economics*, p 489), affirms that in the first case international exchange is profitable to the two exchanging countries under any circumstances, while in the second case exchange is due only to the fact that capital and labour may not leave the country which in its industry presents a lesser comparative inferiority to the country with superiority in the same industry

And Taussig adds this profound thought.

"In an ideal—and we may say utopian—distribution of the productive forces of the world, the division of labour and of commerce which depends exclusively on the comparative differences of cost, will cease to exist"

It is the same idea expressed by Ricardo (not nearly so clearly) when he thinks that commerce founded on a lesser comparative inferiority could not be possible if capital and labour were excessively mobile in the international world

As has been seen, our conception is quite different Between inferiority

The right to existence of the industry of an agricultural country depends only on a single factor, which is the connection between the comparative superiority of its agriculture over industry and the intrinsic (qualitative) superiority of industry over agriculture If the comparative superiority of agriculture $\left(\frac{q}{q_1}\right)$ is less than the intrinsic (qualitative) superiority of industry (K)—that is, if we have $\frac{q}{q_1} < K$, direct industrial production is more profitable.

Then industry has a right to existence.[1]

(68) It is more probable that this condition should be fulfilled in Ricardo's case than in Smith's—that is, in the case where the industry of an agricultural country might be superior to the industry of an industrial country (but comparatively less superior than its agriculture) than in the case of its being inferior

If $K = 1$—that is, if industry has no intrinsic superiority over agriculture, as Ricardo and his school generally suppose, it is certain that, whatever may be the situation of industry in the agricultural country (whether superior or inferior compared with abroad) the commercial solution is more advantageous, since in both cases we have :

$$q > q_1 \text{ so } \frac{q}{q_1} > 1$$

(69) We have already pointed out (see note, par. 59) that our demonstration is *quite general and valid*, whatever may be the two articles The fact of having particularised an

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and a lesser comparative superiority there is only a question of degree The same between superiority and a lesser comparative inferiority According to our deductions, it is a matter of indifference whether we find inferiority ($q_1 < 1$) or superiority ($q_1 > 1$) The advantage of international trade and of production respectively depends only upon whether one has $\frac{q}{q_1} > K$ or $\frac{q}{q_1} < K$

[1] With this demonstration we have come to an almost sensational conclusion Not only have we refuted Ricardo's theory of comparative advantage, but at the same time we have refuted Adam Smith's theory of absolute advantage

It seems we have fulfilled the promise made at the beginning of this chapter

article as an agricultural article has added nothing to the basis of our hypotheses, and has had no other purpose than to give a more concrete character to our too abstract reasoning

We might have any other hypotheses about the two articles and about the character of the two exchanging countries without altering our conclusions

Of these possible hypotheses it would be interesting to consider the following one.

Let us suppose that, instead of considering the agricultural article in the quantity Q, where the country A has the superiority q over the country I, we should consider the whole production of A (or an amount of articles which represent the average production of A, which is the same thing)

In this case q represents the coefficient of superiority (or inferiority) of the country A as a whole over the whole of country I. That practically means to say that q represents the ratio between the average productivity of A and the average productivity of I

So the conclusion we stated above (see par 60) becomes:

For A, if $\frac{q}{q_1} < K$, direct production of the article Q_1 is more advantageous than its importation.

How can we express this sentence in simple language?

For a country A which carries on trade with a foreign country (designated by I) if an article Q_1 presents a comparative production $\frac{q}{q_1}$ in its production compared with the whole of its national production which is smaller than the intrinsic (qualitative) superiority of this article, it is more profitable to produce the article Q_1 in country A than to import it.

(70) But we may go further with this example: Let us suppose that in order to appreciate the real sacrifices of both countries for the production of an article we are not to take as a criterion the labour used in production, as we have so far done, but the money spent in both countries. That means that we measure results no longer by labour (see par. 14) but by money.

Now the real unit for measuring the output and the results of country A and of foreign countries is not money, but *man*, who represents at the same time the production and the consumption agent (see par. 14) So, in calculating the results in money, we suppose tacitly and implicitly that in both countries the same sum of money costs the same amount of national effort and represents the same amount of satisfaction—that is, results in money are considered to measure exactly the national advantage of one solution over another

We know that this is really not correct, and that what must be economised in the process of national production is not money, but labour which alone determines that which it costs money to produce. (See par. 36)

Calculating in money, we must perforce admit that in country A and abroad the same sum of money costs the same effort of labour, so there is no general superiority (or inferiority) of country A as compared with country I

Therefore we have $q = 1$ and the formula $\frac{q}{q_1} < K$ becomes $\frac{1}{q_1} < K$. But $\frac{q}{q_1}$ represents just the ratio between the price of article Q_1 produced in country A and the price of the same article produced abroad, so for $\frac{1}{q} < K$—that is, *for the production of article Q_1 in A to be more advantageous than its import, the ratio of the national price and the foreign price must not exceed the ratio of the corresponding productivity of this article and the average productivity of country A. The more the productivity which corresponds to an article exceeds the average productivity of a country, the more the national price of this article is entitled to exceed the foreign price This is a conclusion worth a rule.* Its extent and its importance are considerable, and we cannot sufficiently emphasise them.[1]

[1] Professor D V. Bertie Ohlin, of Stockholm University, President of the Committee of Experts for European Union, has published in the January number of *Weltwirtschaftliches Archiv* a study in English entitled "Protection and Non-Competing Groups," in which he fully deals with our theory, and especially with this particular demonstration We deeply regret that we are not able, on account of this volume having been already set up in type, to reply herewith to his interesting and profound analysis, which, however, does not affect our arguments.

(71) It allows us to answer a very concrete and usual question, whether it is advantageous to produce at home at a dearer rate than abroad and under what conditions. At first the mind refuses to admit the existence of such an advantage. For this reason we must insist all the more upon this demonstration

We shall therefore give a direct and very simple demonstration of a concrete case. In Roumania a truck of foreign coal can be obtained for 6000 lei, although Roumanian coal of the same quality costs 7500 lei per truck On the other hand, the productivity of coal production is 7500 lei per producer per annum, while the average productivity of the country is about 30,000 per producer per annum

In these circumstances it is more advantageous for Roumania to produce coal than to import it Indeed, in order to produce 100 trucks in the country, worth 750,000 lei, the productivity being 75,000 lei per producer per annum, ten producers are required per year

At the same time, in order to pay for 100 trucks of imported coal, worth 60,000 lei, national goods of an average production of 30,000 lei per producer per annum have to be exported—so twenty producers are required per year. So it is more advantageous to produce coal at home even with an inferiority of $6000/7500 = 0{\cdot}80$, so 20%, compared with abroad, than to import them. In importing them, it is with the labour of twenty producers during a year that we get 100 trucks of coal, while in producing them directly in the country, with the same labour, we get 200 trucks of coal. Returning to the general formula we employed above, it is evident that in the present case we have :

$q_1 = \frac{6000}{7500} = 0{\cdot}80 =$ inferiority of country A compared with abroad

$K = \frac{7500}{3000} = 2{\cdot}50 =$ productivity of the article compared with the average productivity of the country,

and at last we get $\frac{1}{q_1} < K$, as we have $\frac{1}{0{\cdot}80} < 2{\cdot}50$.

(72) Resuming our conclusions from par. 67, we shall proceed to make several concrete hypotheses concerning the coefficient of intrinsic (qualitative) superiority of industry.

Let us suppose that $K = 2$—that is, that the productivity of the industrial article should be twice that of the agricultural article (or generally that productivity of industry should be twice the productivity of agriculture)

Let us establish a table of the values of q and q_1, which correspond to $\frac{q}{q_1} = K$—that is, to the extreme case which separates the commercial solution from the direct production solution

As we have $q > 1 > q_1$, the interval in which these ratios may vary is limited enough So if $K = 2$—that is, when the productivity of industry is twice the productivity of agriculture—we have the following table

AGRICULTURAL COUNTRY

Ratio which expresses its agricultural superiority compared with industrial countries	Ratio which expresses its industrial inferiority compared with industrial countries
$q = 1$	$q_1 = 0\,50$
$q = 1\,20$	$q_1 = 0\,60$
$q = 1\,50$	$q_1 = 0\,75$
$q = 1\,80$	$q_1 = 0\,90$
$q = 2$	$q_1 = 1$

Examining this table, we note that (industrial productivity being twice agricultural productivity) if the agricultural superiority of the agricultural country compared with industrial countries is nil ($q = 1$), its industrial inferiority may reach even 50% ($q_1 = 0{\cdot}50$), and yet the solution of direct industrial production in the country remains advantageous (within limits)

If agricultural superiority becomes 50% ($q = 1{\cdot}50$), its industrial inferiority may reach 25% ($q_1 = 0{\cdot}75$)

Lastly, if the agricultural superiority becomes 100% ($q = 2$), its industry must be at the same level as abroad ($q_1 = 1$) for direct industrial production still to be advantageous.

If $K = 4$—that is, if industrial productivity be four times as great as that of agriculture, we have the following table :

AGRICULTURAL COUNTRY

Ratio which expresses its agricultural superiority compared with industrial countries	Ratio which expresses its industrial inferiority compared with industrial countries
$q = 1$	$q1 = 0.25$
$q = 1.50$	$q1 = 0.37$
$q = 2$	$q1 = 0.50$
$q = 3$	$q1 = 0.75$
$q = 4$	$q1 = 1$

From this table we see that (industrial productivity being four times as great as agricultural productivity) where the agricultural superiority of an agricultural country is nil ($q = 1$), then the industrial inferiority may reach 75% ($q1 = 0.25$) and yet direct industrial production is advantageous (within limits).

If its agricultural superiority becomes 100% ($q = 2$), its industrial inferiority may reach 50% ($q1 = 0.50$)

Finally, if its agricultural superiority becomes 300% ($q = 4$), its industry must be at the same level ($q1 = 1$) as the industry of the foreign country for direct industrial production to be advantageous.

Such a table gives the successive solutions of the international trade problem in the ascending phases of a nation's progress

If a nation makes continuous agricultural progress, such as to render its agricultural superiority over other nations 50%, 100%, 200%, 300%, its industry *must* progress at the same time, diminishing gradually its inferiority compared with abroad, according to the scale of the table.

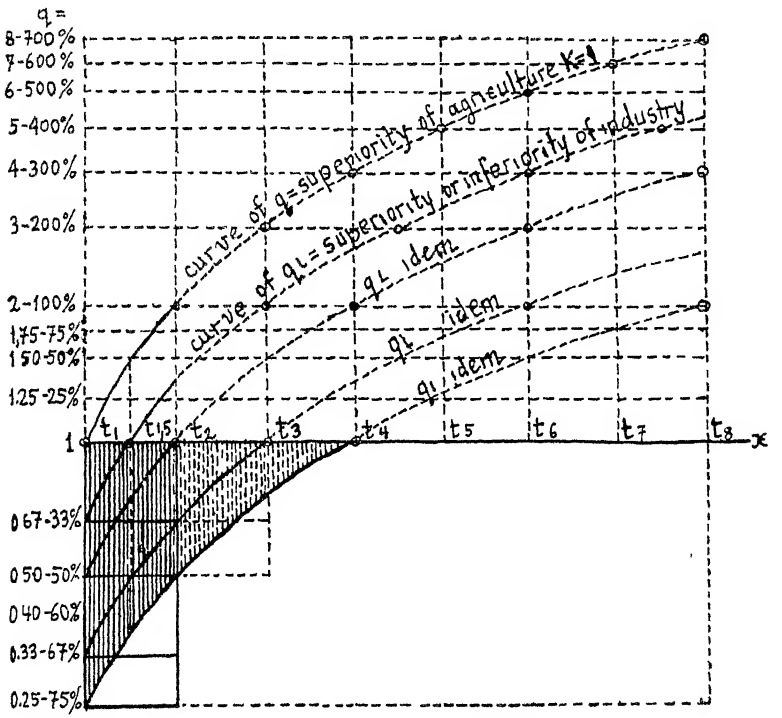
If industry does not show this progress, it remains so much behind agriculture that it will become more advantageous for the country to raise agricultural produce only and to discontinue industrial production.

And inversely, the same is true.

If industry makes such progress that its inferiority compared with abroad gradually diminishes, agriculture must progress at the same time by increasing its superiority compared with abroad, according to the scale of the table,

otherwise it is more advantageous for the country to produce industrial products only and to discontinue agricultural production.[1]

(73) We have thought it interesting and enlightening to present the correspondence of agricultural superiority and industrial superiority in graphic form



Let us suppose that at regular intervals the agricultural superiority compared with abroad, expressed by q, increases regularly, beginning from parity ($q = 1$), so that we might have: for the periods $t1$, $t2$, $t3$, $t4$ and so on, a ratio of superiority equal to 1, 2, 3, 4, etc

In order to represent this evolution of agriculture by means of a curve, we put the intervals of time on the abscissa

[1] Or to develop industrial production up to the natural limit of home consumption (see par 36)

and the corresponding values q on the ordinate For the latter we take as length scale the logarithm scale which corresponds better to their character, since it allows us to represent, by equal lengths, a superiority of 100% (in ratio 2) and the corresponding inferiority of 50% (in ratio 1/2), a superiority of 200% (in ratio 3) and the corresponding inferiority of 67% (in ratio 1/3) and so on

In this representation the abscissa ox is set at the bottom of the table *ad infinitum* It corresponds to $q = q1 = 0$. The horizontal line ox is the line where $q = q1 = 1$—that is, the parity line between national and foreign industry or the parity line of national and foreign agriculture

The curve q presents a quasi-parabolic aspect (more exactly: logarithmic) beginning from the point where $q = 1$

The problem is thus the following:

If agriculture makes continuous progress, such as is shown by curve q, how must home industry develop in comparison with foreign industry for it to be profitable for the country to maintain it (within limits) or for it to keep step with agriculture?

The curve of industrial evolution depends on the value of K.

We have drawn four curves, each of them corresponding to the three values of $K = 1{\cdot}5$, $K = 2$, $K = 3$, $K = 4$.

The aspect of these curves is very significant All four develop themselves partly above the parity line ox, so they show a clear inferiority of industry over a large portion, as the curves above the line 1 represent the superiority of industry or agriculture compared to abroad; the curves under that line represent the inferiority of industry compared to abroad

In spite of this inferiority shown by the curves of industry, these curves are equivalent to the superiority line of agriculture.

To keep step with agriculture is, as may be seen, quite easy.

It is not necessary for industry to have a superiority compared with abroad; even a large inferiority is sufficient, if the superiority of agriculture is not too great.

Only when agricultural superiority in comparison with abroad becomes too great can we demand more of industry and need it to have a superiority.

(74) The most remarkable, and the essential point of our conclusion is that (thanks to the decisive part of intrinsic (qualitative) superiority in industrial productivity compared with agricultural productivity), if agriculture wants to impose itself as profitable for a country from the strictly economic standpoint, it requires an enormous superiority compared with abroad, while for industry to have the same advantage does not require a superiority, but may admit of a very marked inferiority compared with abroad

It is not we who have decreed this exigency for agriculture and this indulgence for industry.

They are not arbitrary, but the logical and unavoidable consequences of a state of things.

In the present state of civilisation industry has an intrinsic (qualitative) superiority over agriculture in any country of the world, which is due to its great productivity.

In some countries it may allow itself to be inferior compared with abroad as long as this inferiority is not so great as to fall below the level of agriculture.

Inversely, agriculture is universally deprived of advantage on account of its intrinsic (qualitative) inferiority compared with industry because of its small productivity.

In any country, therefore, it requires a great superiority compared with abroad in order to be able to make up for this intrinsic (qualitative) inferiority and to be able to rise to the level of industry

We should like to underline another point : the importance of our conclusion for understanding, and eventually directing, the economic evolution of a country.

Our conclusions are not rigid, and they do not merely apply to one period of the life of a people

They show us how national interest may be construed at different periods of progress in the policy of production and trade.

For an agricultural country in the process of becoming

industrialised, one may follow step by step, at every progress of its industry (expressed by the diminution of its inferiority compared with abroad) the manner in which its agriculture must progress (increasing its superiority compared with abroad) so that national interest may maintain the same level as is presented by agriculture.[1]

(75) An example of comparative advantage in international exchange, almost as famous as Ricardo's, is John Stuart Mill's example.

Mill supposes that in England 10 yards of cloth demand the same labour as 15 yards of linen, so that these two quantities have the same exchange value.

At the same time he supposes that in Germany 10 yards of cloth demand the same labour as 20 yards of linen, so that these two quantities have the same exchange value.

He recommends England to produce only cloth, since with 10 yards exported to Germany it may have 20 yards of linen instead of the 15 yards it could itself produce, *i.e.* by international trade it may have a profit of 5 yards of linen

In the same manner, Mill recommends Germany to produce only linen, since with 5 yards of linen exported to England it may have 10 yards of cloth, while in Germany it would require 20 yards of linen for the same quantity of cloth, giving Germany a profit of 5 yards of linen from international exchange

It therefore still seems to be a positive advantage for both parties to exchange.

We shall not go back to the analysis we developed in the general theoretic case (see par 59 and following pars), of which Mill's case is only a particular example.

Indeed, we may make our theoretic case particular, and say that country A is Germany and country I is England, linen being the agricultural produce and cloth the industrial produce.

If 100 q_1 workmen in I produce 15 yards of cloth, and if

[1] We think it useless to repeat that we are still considering the exclusive point of view of the capacity of producing exchange values (see par 36), the only point of view we consider in the development of our theory.

100 q workmen in A produce 20 yards of linen, it follows that

$$q = \frac{20}{15} q1 = 1{\cdot}33\ q1$$

Consequently this is the theoretical case when $q > q1$.

If we want a real advantage, and not an apparent one, from international exchange we must have $q > q1 > 1$.

It is most important to remark that Mill discusses how the profit of 33% which results from international exchange should be divided, when, in reality, this advantage is in most cases merely apparent.

Why does the apparent advantage become real only in a few particular cases?

Because there is an essential error in the way this advantage is identified and measured

According to Mill, if Germany gives up its cloth production and produces only linen, it buys the cloth it requires with an economy of 33% of linen, and he tries hard to establish how this economy of linen is divided in international trade.

He recommends Germany to suppress its cloth production and to produce instead a supplementary quantity of linen, or to economise in a certain quantity of linen compared with abroad [1]

[1] Regarding John Stuart Mill's example we must add the following observation Could not another *working programme* be realised for Germany, *according to which, with the same labour, a larger exchange value would be produced*? Certainly Because if, according to Ricardo, Germany was not obliged to produce linen where it has a comparative advantage but a small productivity, but to produce cloth where in spite of the comparative disadvantage it would realise a high productivity, we should have the following result.

Let us suppose that the productivity of cloth in Germany is twice the productivity of linen

What does Mill recommend?

Germany must produce only linen This means to produce with N working days 20 units of linen

What do we recommend?

Germany must produce only cloth, because in this *article* the productivity in both countries is approximately twice as large as that of linen.

This fact means that the produce of labour, working in cloth, is exchanged for the labour of two workmen, working in linen, viz that in the absolute home trade in England 10 units of cloth are equal to 30 units of linen, and that in Germany 10 units of cloth are equal to 40 units of linen

By making the same demonstration as Mill, we may appreciate that the common equilibrium of prices in both countries will be about the equivalent of 10 units of cloth to 36 units of linen

That is to say, that to buy the 20 units of linen, which are produced

(76) But is there not another problem in this case?

Is linen an absolute currency for measuring the effort of a nation, in order to judge whether an economy in linen is a real economy for a nation?

Like cloth, linen is made of labour, and it is only by reducing these two goods, cloth and linen, to labour, the common measure, that we may judge whether producing more linen (even with 33% economy compared with abroad) instead of producing cloth, means at the same time an economy of labour (or, which is the same thing, a greater productivity of national labour)

The same for England, by giving up the production of linen and producing only cloth in order to buy linen, there is an economy of cloth of 33%

One is entitled to ask, as above, whether in suppressing the production of linen and producing a supplementary quantity of cloth for exchange instead (in the production of which it would save much cloth) England would realise at the same time an economy of labour.

An interesting antithesis arises here, which forms the most important part of the contrast between our theory and the classical theory of Ricardo, Smith and Mill

Mill shows that both in Germany and in England there is an economy calculated in quantity of goods But if we calculate economy in national cost of production—that is, in the quantity of labour used—we come to quite different conclusions

If cloth productivity is superior to linen productivity, the free-trade solution is favourable for England and unfavourable for Germany, since the former is obliged to produce more cloth than it requires (thus supplementary goods having greater exchange value with less labour—that is, great productivity), while the second country is obliged to produce more linen than it requires (thus supplementary

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with N working days, Germany requires only $\frac{20}{36} N$ working days (because with N working days it produces 10 units of cloth equal to 36 units of linen) Therefore, instead of N working days, Germany produces the same quantity of linen with $\frac{20}{36} N = 0.55$ working days

goods having the same exchange value with more labour—that is, less productivity).

Changing the measure of unity, the conclusions are changed. Measuring the national output of Germany in linen (which would be erroneous), one may conclude that there is an advantage in exchange, not measuring it—as should be done—in *labour*, we reach the opposite conclusion.[1]

The error of the classicists has been to neglect this distinction.[2]

[1] If cloth productivity is double linen productivity—that is to say, if, in order to produce the same exchange value, half the days of work are required for cloth than for linen, then by producing only linen in Germany we find a disadvantage expressed by the ratio $\frac{1\ 33}{2} = 0\ 67$, instead of finding an advantage expressed by 1 33 (see above, par 56)

In the face of such clear assertions, it seems to be useless to continue Mill's reasoning on the distribution of the advantage of international exchange between the two countries

The apparent character of this advantage for the country which exports the commodities with small productivity has too often been made evident, and exempts us from examining the distribution of an advantage which is merely one-sided

However, let us quote how Mill looks upon certain cases of distribution of this advantage

" It still appears that the countries which carry on their foreign trade on the most advantageous terms are those whose commodities are most in demand by foreign countries, and which have themselves the least demand for foreign commodities From which, among other consequences, it follows that the richest countries, *cæteris paribus*, gain the least by a given amount of foreign commerce "

This conclusion has only one excuse that of being a unilateral conclusion, concerning only the commercial operation isolated from the production operation

It is possible, and even probable, that in strict exchange operations the profit realised by traders, above the cost price, is distributed between both trading countries according to the rule indicated by John Stuart Mill (we need not enter into the details of this rule, as it is too well known)

In especial, it is natural that the strictly *commercial* profit of a country which exports raw commodities (cereals or raw materials) represents a greater proportion of the total profit of the commercial operation than if the country exported only industrial goods

But, in order to judge the advantage there would be in devoting oneself to the first or to the second kind of commodities, the respective advantages of their production should also be compared

Only when the commercial operation and the production operation are combined, do we get an exact idea of the total national advantage of one production or another

Well, we have asserted that from the synthetic standpoint the advantage is not on the side of raw materials but of strongly industrialised goods allowing of great productivity

[2] It may be said in another form

By superiority or by a less comparative inferiority which a country has in the production of an article compared with abroad, this country secures

(77) The theories of Ricardo and Mill concerning the advantage of trade on the basis of comparative differences of cost, throw light only upon the commercial and individual side of the international exchange problem.

The character of the production of a country being given and fixed, there is an advantage for both from international trade.

Trade is governed by the law of absolute advantage (Smith) and by the law of comparative advantage (Mill), and only in connection with these two laws are the movements of trade directed one way or the other.

These movements are caused and stimulated by the interests of individuals who carry on trade, to which interests they give satisfaction.

But the existence of individual profit of traders is not a proof of real profit to a nation nor of the profitable character of these operations for the nation as a whole

Once more we see that antithesis which we have so often spoken of between individual and national interest (see par 13).

National interest requires that not only the exchange operation but also the production operation be considered

If the structure of production of both countries is not fixed, and if it cannot be adapted—sooner or later—to the direction prescribed by the interests of the nation, then this direction will be quite different from the one laid down by the classical school of writers (as we have already proved).

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for itself with this article the advantage of buying a larger quantity of goods produced abroad

On the other hand, if this article has a large productivity, a larger quantity of goods is really bought abroad with the output of the same number of workmen

CHAPTER IV

THEORY OF PROTECTION

(78) All we have proved with our two arguments regarding the theory of international exchange and the subsequent statements, forces us to acknowledge that the natural tendency of every country must be towards superior industries with great productivity.[1]

The best way of making use of national energy seems to be the multiplication of superior industries with great productivity [2]

[1] We cannot sufficiently insist upon the revision we have just made of the theory of international exchange From the scientific point of view, this revision is of the greatest importance, since the actual theory of protection is its normal consequence

Indeed the theory of protection we are studying in this chapter gives a number of conclusions drawn from the idea of productivity and from the classification of the branches of national production according to their productivity Should we have succeeded, in our work, in making a new contribution to science, we believe that this contribution resides above all in the revision we have made of the classical theory of international exchange by the help of a more complex method of analysis

[2] Just as the productivity of labour is not uniform, neither is the productivity of capital

We might classify the active productivities of a country according to the productivity of capital and show conclusions analogous to those we have drawn for the productivity of labour

To say, as the classical school does, that the displacement of activities caused by protection is of no effect because a country's disposable capital is constant and limited, would be nonsense It is just because disposable capital *is* limited that the best use must be made of it by directing it to those branches of production in which the net production realised by each unit of invested capital is the greatest It might be objected that the criterion of labour productivity might lead us towards certain special industries, whereas the criterion of capital productivity might tend towards other industries Reality shows us that there is a certain coincidence between both categories For instance, industry as a whole maintains its advantage over agriculture as a whole, both in capital productivity and in labour productivity, although for the special differentiations between the different industrial branches the coincidence disappears

In order to classify industrial branches by means of the double criterion (synthetic criterion) of labour productivity, the formula we gave in par 15 may be used, $\frac{P}{\sqrt{TC}}$

All the same, this formula contains something arbitrary, because in

Every displacement of the forces of production (men or capital) towards the more productive industries is for a nation *clear profit* (see *infra*, par. 79)

Every converse displacement towards less productive industries is *dead loss* [1]

The more the vertical displacement on the productivity diagram is great—that is, the more the difference of productivity between the industry which is being replaced and the new industry is great, the more profit or loss there is for a nation (according to the direction of the displacement).[2]

If now a new industry springs up in a country, the first interesting thing is to know on what degree of our scale of productivity it must be placed If it will occupy a high degree, it has many chances of representing a positive advantage for the country, especially if we consider that without the establishment of such an industry the country would have been obliged to import the goods it produces. Had this new industry not been founded, the country might have been obliged to get these goods from abroad, paying for them with other goods produced to this end (we are going to call such goods " exchange goods ").[3]

$\sqrt{IC}$ the importance given to capital is the same as the importance given to labour

But, in reality, the importance which should be given to the productivity of the worker should be greater than the importance given to capital productivity—so that a better construction would be $\sqrt[4]{I^2} \times \sqrt{C}$, or, generally, $I \times C^y$, where the fractional exponent x is greater than the fractional exponent y

We must note that in order to compare the different agricultural branches, the module $\sqrt{IC}$ could well be replaced by $\sqrt{IS}$ or by the module $\sqrt[3]{CIS}$, in which S is the surface of land allotted to a branch of agricultural cultivation

[1] Protection really represents a *loss* for national economy when it is applied to commodities with small productivity with consequent encouragement of their production, it brings down the level of average productivity of a country Such is the case of the protection granted to agriculture in some countries, the absurdity of this is made plain by our remarks

[2] This recalls the well-known physical phenomenon, when in a magnetic area the displacement of a particle (normally on the lines of the forces) shows a loss or gain of energy, according to the direction of the displacement

[3] It is interesting to draw attention to the way John Stuart Mill has insisted upon what forms the essential point of our argument (*op cit*, Chapter XVIII, p 395)

" The value of a thing in any place depends on the cost of its acquisition in that place, which, in the case of an imported article, means the cost of production of the thing which is imported to pay for it "

The heart of the problem is to know whether goods which must be manufactured for exchange should be placed on a higher or lower degree of productivity than new goods manufactured for the first time in the country.

Our answer will not be the definite answer, but merely an indication destined to shed from the outset a little light upon the phenomenon we are studying We shall come back to it later with the correct answer.

(79) The supreme argument of free-trade, and the argument which forms the central point of that theory is :

" If a branch of national production works under inferior conditions to that of a foreign country, it must be relinquished and some other production be undertaken." [1]

This recommendation is the result of a certain thoughtlessness and superficiality in the consideration of economic phenomena and the economic structure of a country It

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And further on —

" The value then in any country of a foreign commodity depends on the quantity of home produce which must be given to the foreign country in exchange for it "

We are only developing this principle in its ultimate consequences, with the difference that for us the cost of a production is the amount of home labour, *i e* workmen, employed during a year (see also par 76)

[1] Let us first quote JOHN STUART MILL

" By international commerce a country obtains things which it either could not produce at all or things which it must have produced at a greater expense of capital and labour than the cost of the things which it exports to pay for them It thus obtains a more ample supply of the commodities it wants, for the same labour and capital, or the same supply for less labour and capital, leaving the surplus disposable to produce other things "

In the decisions of the Geneva conference from May 1927 the same idea appears

" In these cases the losses are suffered by the consumers who have to pay more for the produce of the protected industries, as well as by persons interested in these industries who otherwise would have had greater opportunities of export "

Some authors have been aware of the inutility of the recommendation " to undertake something else " Among others, HECHT has stated (*op cit*, p 343) that international competition tends to throw every country towards " unskilled " industries FRANCIS (*op cit*, p 343) from whom we quote this very clear and categorical passage, says —

" Take up another trade " " ' Another trade ' even if what may be obtained in the future is of an inferior quality " In the same way EVERT, *Fuenf Hauptargumente der Freihandelslehre* (Dakar, Berlin, 1905, p 5), remarks that it is not necessarily probable that a better production will be found.

It is one of the most important errors of free-trade that it presents as *necessary* only that which is only *possible*.

supposes that the production of "something else" must necessarily be more advantageous or just as advantageous for the country as the production of the thing which it is proposed to neglect Regarding the problem set above, one wonders, supposing one does not want to create new industries to produce the goods a country requires (and if these goods have to be imported) with what other exchange goods will they be paid?

In order to know this, the structure of export and of production of this country must be considered (see par 98 for this distinction) In the diagram of productivities there are different degrees of productivity ranging from the lowest to the highest which is only realised by a small number of workmen.

There is at the same time an average productivity of the country which represents the average (balanced) of the productivity of all the producers of a country.[1]

[1] Crompton gives us a very interesting method of presenting the antithesis of our way of thinking and that of free-trade inspired by the theories of Smith and Ricardo (*op cit*, p 73)

He classifies all the productive activities of a country from *A* to *Z* according to the degree of their advantage compared to a foreign country.

A to *L*	With advantage compared with abroad	Viable without protection
M to *V*	Without disadvantage compared with abroad, but with the least comparative disadvantage	Viable with protection
W to *Z*	Non-viable	

It is on this classification that national activities should be estimated and if necessary protected

The order of the classification is determined according to the coefficient which expresses the advantage compared with abroad, beginning from goods where the advantage is 80%, passing to those where it is 70%, 50%, etc, to come to those where it is 5% or 0 and then to those where the disadvantage is 5%, 10%, 50% and so on. To this table we oppose our classification in which the comparison with abroad does not come into account, and in which all national activities are entered according to their productivities.

a to *K*	Great productivity above the average	If they require protection, they should get it, in the order of the table
l	Average productivity	
m to *Z*	Small productivity below the average	If they are not viable, they should not be protected

The order of the classification is determined here by the absolute value of productivity, beginning with goods whose productivity is, for instance, 10,000 gold francs per producer per year, then passing to those whose productivity is 8000 to 6000 francs and so on.

It is the average productivity which will give us the first indication of the answer to our problem

As a matter of fact, goods which may have to be created for exchange will not be goods of a new kind for the country they must be obtained by increasing the quantity of goods already produced in the country, they must be pre-existent in the framework of national production. It would be improbable that these exchange goods would be at the extremities of the productivity scale, on the contrary, they should naturally be near the average of productivity.

As a first indication, we may say that if, in order to be produced in the country, the new goods have a superior productivity to the average production of the country, there are many chances that the exchange goods produced at home may have a productivity inferior to the production of the new goods in the country.

By importing these goods instead of producing them at home, there will thus be a dead loss

Conversely, when the new goods require for their creation an operation of productivity inferior to the average productivity of this country, there are many chances for the import of such goods to be more advantageous than their manufacture at home.

In short, the average productivity of a country is in some measure a line of separation between new products.

An economic operation is generally profitable when it brings about new production (or increases the quantity of old production), requiring a productivity superior to the average productivity of the country, it is disadvantageous when it brings about new production requiring a productivity inferior to the average.[1]

In the first case the average productivity of the country increases, in the second, it decreases.

[1] FRANCIS, *op cit*, p 8 · "When the imported articles might have been produced in the country, we lose, and we lose without any compensation"

Here is an example of dogmatic assertion, which, although not true, has done much harm to the protectionist principle

If instead of such an absolute and absurd assertion, we offer an answer such as ours which would concede, where concession is necessary, its rights to free-trade the protectionist doctrine would not be diminished, but strengthened

(80) At first it might seem absurd that a new production operation, however little productive, should count as disadvantageous and almost negative

Yet this conception corresponds perfectly to the realities of modern life A nation that, even if it increased the absolute value of its production, might not be able to increase it to the same degree as its population would be a nation condemned to poverty and decline.

A nation must retain the average productivity of the population—if not increase it steadily—because this means to retain the average level of consumption and the average level of social welfare

Theories which, under pretence of division of labour and specialised production, advise a nation to employ its new forces and excess population in inferior activities of weak productivity, are theories of national decline and decay.[1]

(81) But we have said that the idea of average productivity is merely an indication.

The concrete problem seeks a more precise solution.

In order to know whether there is advantage in importing certain goods or in producing them in the country, we must first examine what are the exchange goods which could be manufactured at home in order to pay for imported goods, in such a way as to show a productivity superior to that of the country manufacturing the imports

Generally speaking, it is not easy to find out when there is a concrete possibility of producing at a high degree of productivity in a country.

As a rule, opportunities for the activities of a great productivity are somewhat restricted, and the more restricted as we rise in the productivity scale.

Evidently, according to what we have said, in order to have

[1] TAUSSIG (*op cit*, p 509 and following) advocates the suppression of industries which cannot freely support foreign competition, and the displacement of their workmen towards export industries in which the country has a distinct superiority compared with foreign countries (otherwise it would be unable to export ! !)

But for agricultural countries this export industry is precisely agriculture

Well, agricultural branches have the lowest productivity of all the branches of national production

This recommendation points therefore to the way of regression.

advantage from importing certain goods, it is not necessary to produce other exchange goods with *the same* degree of productivity: if their productivity is larger, the import advantage is also larger.

The important thing is to find such a production

Generally, inferior activities have greater opportunities; the opportunities of very productive activities are more restricted.

It is not merely a question of competition; the question of "difficulties" is very important Inferior industries are simple (from the point of view of their plant and organisation), superior industries are complex.[1]

[1] Economic reality teaches that the more an industry represents a great productivity, the more its establishment and organisation are difficult, so the more difficult is the *initiative* for the creation of such an industry Therefore in the development of the apparatus of production of a country, initiatives are led first to branches of production, easily conceived and established, and they move successively towards the more difficult branches of production—that is the more intensive (with greater productivities)

Normal progress ranges from easy manufactures to difficult manufactures, so from those with small productivity to those with great productivity Usually, it is the force of necessity that engenders more difficult operation

When the possibilities of an inferior activity are exhausted, one plunges into a complex activity

There is here a certain analogy with Ricardo's theory of rent After exhausting the easily tilled land, one ventures upon more difficult land ! !

This method of reasoning leads us necessarily to the conclusion that the "something else" advocated instead of the creation of an industry with strong productivity (one inferior when compared with abroad) can be only a lesser productivity, therefore situated lower down on the national scale of productivities If "something else" were a more productive industry, it would be more difficult to establish and would require an even stronger protection in order to make up for its inferiority compared with abroad

An assertion of this kind contradicts Adam Smith's idea, according to which the investment of capital in a country begins with the most profitable industry and so forms a perfect harmony between individual and general interests

It is true that capital always looks for the most profitable investments which may be offered at a certain moment, in its own interest But the order of these investments is quite different from the order suggested by national interest and national profit Once more the antithesis between national and individual profit appears We cannot resist the temptation of quoting other writers to this purpose

PATTEN (Chap VI, p 78) "The experience of the whole world has superabundantly proved that the ways of employ most profitable to the workmen are not the first to be utilised"

GEORGE EVERT, *Reichspolitik oder Freihandelsargument*, p 5 "The *pragos feidos*? of any free-trade theory rests on the confusion (*Verwechslung*) of certain interests of business men with general interests"

FRANCIS (*op cit*, p 58) "Protection leads men both to take into account, and to identify themselves with, a country's welfare Free-trade

That is why, in most cases, if we have to decide whether goods with a high productivity should be imported or manufactured at home, there is no hesitation.

Every time that it is possible such goods ought to be produced at home, because otherwise, in order to import these goods, exchange goods of an inferior productivity would have to be produced.

(82) Up to now we have implicitly supposed that it was possible to produce the goods in question at home at the same price as they are produced abroad.

This supposition renders any kind of protection useless, since home production is then at the same level as foreign production and may compete with it under free-trade.

Let us now consider the case where the same goods cannot be produced at home except under inferior conditions to the foreign conditions, consequently at a higher price than the international market price [1]

Free-traders eagerly cry out that in this case there is only one thing to be done—not to produce the goods at home at all!

Let us see if they are right.

Suppose these goods could not be produced in the country except by the employment of more labour (less productivity) than abroad and in generally inferior conditions, so that the price of the indigenous goods should be in the ratio of 5 : 4, or 25% greater than the price of the same goods, when imported.

In this case production cannot continue because of competition But if the State interferes and adds a customs protection [2] of 25% on the value of the foreign goods, the

[1] It is interesting to notice that the classic writers (Ricardo and Mill) never attack protection by the direct method

In the international exchange examples they present, they never introduce the effect of protection taxes

All their arguments against protection derive either from the contrast of free-trade advantages or from considerations which are not connected with political economy

We intend to follow free-trade demonstrations step by step, and to analyse every example in two possible cases—that is to say, with and without the influence of customs taxes

[2] In all our demonstration and throughout our book we consider customs taxes the only means of protection, but our demonstration is quite valid if, instead of customs taxes, subventions or other direct advantages are

price of these goods becomes equal to that of the indigenous goods, and national production becomes possible.

Now, if the human labour productivity at home is compared with productivity abroad, for the same goods, it is evident, according to the hypothesis made at the beginning, that among other inferiority causes, home productivity must be inferior to foreign productivity (in other words, if the labour of a workman produces abroad in one year n units of goods, the labour of a workman at home will produce fewer units, not necessarily $\frac{4}{5}n = 80\%$ units, but a number approaching this)

If, disheartened by free-trade theories, we give up the production of these goods at home, we cannot say we have realised any advantage.

Indeed, according to our previous demonstration, what should occupy our minds at the moment we give up the idea of producing new goods at home, is to find other exchange goods having a larger productivity than the new goods, which may take their place on the scale of national productivity.

The advantage or the disadvantage of the import of the new goods depends only upon these exchange goods.

(83) If, however, on the productivity scale we cannot find such exchange goods—since all goods produced so far in the country are of an inferior productivity—it is evident that it is to our advantage to produce the new goods at home instead of importing them, and this, in spite of a manifest inferiority in the production of these new goods compared with their foreign production.

The case we have supposed—although rare—may be met with in practice [1]

The theoretic interest of this case is really exceptional

granted to national industry, provided that these advantages represent the same value as customs taxes for every unit of produced goods So our theory is a general theory of protection, not merely a theory of customs taxes

[1] There is, for instance, the case of a country with low industrial development in which the manufacture of synthetic chemical products has been started, this industry has an immense productivity such as has not previously occurred in the most important (the most productive) industries of the country.

For it shows categorically, by extremely simple means, that there are cases when, by producing certain goods under inferior conditions compared with abroad, a country may realise an immediate and positive advantage over its importation of these goods

The customs tax which exaggerates the price of the foreign article, or the subvention which encourages the manufacturer, leads to a direct and actual profit for national economy.

Moreover, there is a second consequence of great theoretic interest. *A priori* no limit could be prescribed to the degree of protection which might be granted to certain goods.

Indeed, if we are in such an exceptionally inferior state of national production that for certain goods the productivity of national labour is so small in relation to what it is abroad that the price of the national goods should be three times bigger than the price of the foreign goods, and if, in spite of this, the degree of productivity required for the creation of the goods at home is still superior to the highest degree reached by any other goods in the country, then a customs tax of 200% would be practically and theoretically justified, and would establish equanimity with foreign prices and would allow the production of the goods in the country.

Thus, in spite of the considerable comparative inferiority with abroad, the country would have an advantage in introducing a new activity with a degree of productivity not before attained by any other home production.

This assertion occasions ample reflections.

A prohibitive customs tax, a tax which trebles the value of certain goods for home consumption, and yet a tax which can be justified!

This drives a nail into free-trade theories which try to establish in a general way that all protection measures lead to substantial and actual losses and which rarely admit of any departures from free-trade and then only as "sacrifices" or for reasons divorced from economic considerations

The importance of our theory, as it has been developed up to now, lies in the fact that, in certain cases, we can justify protection in the most absolute manner.

Without the intervention of non-economic reasons (national defence, fiscal necessities, etc), without having recourse, like List, to temporary economic sacrifices, we set ourselves unconditionally on the exclusive ground of the concrete and immediate economic profit a country may derive from protection.[1]

And yet we succeed in proving that there are cases when, by a protection of extraordinary proportions, national economy may realise great profit, and by free-trade suffer a dead loss It is impossible to find a general refutation against protection.

That is the first conclusion.

There is no *a priori* limit for the degree of protection (there are cases when the highest degrees of protection may be justified). That is the second conclusion

The highest degree of protection, even that which exceeds 100% of the value of goods, may eventually be irrefutably justified.

To decide between protection and free-trade, one is reduced in each particular case and for every kind of merchandise to an appreciation of a qualitative order, to a comparison between things that are measurable.

(84) For the sake of clearness we have up to now only shown the absolute legitimacy of protection in cases where the productivity of the new goods which have to be produced at home would, in spite of its relative inferiority compared with abroad, still remain superior to the greatest productivity so far realised in the country with all other goods which have been produced

It is not necessary to go so far.

Protection may be legitimised in the clearest way, not merely in extreme cases, such as the one quoted above.

In approaching the top of the productivity diagram we meet with productive activities more and more difficult to carry out, and developed by ever more complicated and delicate enterprises.

These activities—these superior forms of production—are

generally—as we have shown (see note par. 81) difficult of access

Practically, then, even if the productivity corresponding to the new goods which have to be produced is not superior to the greatest productivity which can be realised but is classed among the highest degrees of productivity so far attained in the country, there is still a great advantage in producing these goods instead of importing them.

The economic progress of a nation does not consist only in the introduction of new activities of a productivity superior to existing productions, but also in the multiplication of activities with productivities classed at the base of the productivity pyramid.

It follows that in order to declare an operation advantageous and profitable for a nation, it is not necessary that it should exceed the productivity of all other productivities, but it is sufficient for it to be among the most productive which already exist in the country adopting it.

We may formulate a general conclusion in the following terms :

To decide whether a new kind of goods should be imported from abroad or produced in manifestly inferior conditions in the country itself, the degree of inferiority plays no part

Whatever may be the inferiority (the disadvantage) of the production of these goods at home, only two circumstances are conclusive in order to decide the alternative.

> (*a*) The absolute degree of productivity which corresponds to these goods should they be produced in the country.
>
> (*b*) The position of this productivity degree on the productivity scale of national activities.

Even if the production of these goods shows the greatest inferiority as against foreign production, if the degree of productivity of these goods—when produced at home—may classify its production above the most productive activities of the country, or even among the most productive activities,

protection, which allows the manufacture of these goods in the country, is plainly advantageous.[1]

(85) For greater clearness, let us insist upon the meaning of these conclusions

Generally what strikes the mind of those who deal with protection is the degree of protection—that is, the percentage of the customs tax in relation to the value of the goods before importation

Everyone is quite ready to accept a protection of 10%, but a protection of 50% or 100% and more is declared beyond all common sense.

The whole protection problem rests on the question of rates, because the rate must level the difference of price between foreign and national goods, and must show the degree of inferiority of the home production compared with the foreign production.

And this is readily assumed .

If any national production is not able to maintain itself with prices at 20%, 30%, or even 40% beside the similar foreign production, it is better to let is disappear.

What seems to be decisive for protection is the degree of inferiority compared with abroad

But after all we have said above, it stands to reason that

[1] BRENTANO (*op cit*, p 5) "The value of the annual production would be more or less diminished if our productive forces are withdrawn from the production of things which have an evidently greater value than that of things in which these forces will be applied later on by State protection"

Nothing is falser than this supposition We have shown that the part played by protection is precisely to increase the productivity of national interests and to provoke the production of things which have an evidently greater value compared with the things which could be produced without the assistance of protection

An industry may have a high productivity and still be much inferior to similar foreign industries, while other industries may have a small productivity and still be superior to the corresponding foreign industries.

For instance, the chemical industry is in all countries one of high productivity—that is, an industry which has above all others what we have called "intrinsic productivity"

It may be, in one country, inferior to the chemical industry of another, and yet show a considerably superior productivity compared with other national industries Such an industry demands protection in order to be able to resist foreign competition (since it is not capable of producing, and still less of exporting, alone), and must be protected because, owing to its high productivity, it represents a great intensity in the production of exchange values

this inferiority plays no part in a declaration for or against protection

It is not the relation between the productivity of certain goods abroad and their productivity at home, nor even the relation between price of goods abroad and at home which are conclusive

The only important thing is the absolute productivity realised in the home manufacture of these goods.

If the productivities which correspond to two kinds of goods abroad are, respectively, 20% and 200% superior to the home productivities of the same goods it is of no importance if the home productivities of both goods are equal.

If article *A* under foreign production produces 2400 gold francs for the annual labour of one workman, and article *B* produces 6000 gold francs, and if both goods when produced at home each produce 2000 gold francs, the national interest in producing both articles is quite equal in spite of the inferiority (disadvantage) compared with abroad being much greater for article *B* than for article *A*.

Of course the customs tax which will have to establish equality between home prices and foreign prices must be extremely different, and will be of the order (not quite equal to) of 20% for *A* and 200% for *B*.

That changes nothing in this assertion, the case of *A* and of *B* are quite equivalent from the point of view of national interest.

The amount of protection intended to equalise home prices with foreign prices plays no part at all.

It may be infinitely more profitable to produce in the country itself certain goods the productivity of which is very inferior compared with abroad (so needing a very high protection percentage) than to produce certain goods the productivity of which is almost the same as it is abroad (so requiring a minimum customs tax).

Indeed in the recent example the goods *B* could be produced at home only with a very small productivity compared with abroad (the proportion of 1 to 3), which would need a customs tax of 200%.

Yet the productivity realised in the production operation

is high enough, and amounts to 2000 gold francs per workman per annum.

If, now, another kind of goods, *C*, presents a very small inferiority compared with abroad—say of 10%—in its productivity (needing a minimum customs tax), but if the productivity realised in its manufacture is very small, and amounts, for instance, to 800 gold francs per workman per annum, in this case it is infinitely more profitable for national economy to produce goods *B* with a protection of 200% than to produce goods *C* with a very small protection of 10% [1]

Even if the goods *C*, which have a very small productivity (800 gold francs per workman per annum) were to be manufactured in the same conditions as abroad and were in no need of protection, the conclusion would be the same

In a short formula—which, however, lacks scientific precision—one may say that it is always more advantageous for a country to develop productive activities with a small output compared with abroad, rather than to develop smaller productive activities with an excellent output Patten, (*op. cit*, Chapter XIII, p. 189). "By protection, the whole productive force will be so much augmented that the nation will be able to keep for itself a larger quantity of these products, even if they are dearer." Finally, in a formula which is still far from precision, but much more simple

"It is better to produce dear things at a high price than to produce cheap things at a low price" [2]

[1] The absurdity of the proposals made at the Geneva Conference may now be better understood They were to "maximalize" the tariffs of all countries, by fixing a "ceiling" for customs taxes

"There is no logical reason for saying that the disadvantage in the cost of labour, that is, the disadvantage in the efficacy of 20%, must be covered by a protectionist tax, but that one of 50%, 100%, 200% must not be covered" (Taussig, *op cit*, p 516)

[2] The want of scientific criteria for the application of production leads to the worst consequences

It is sufficient to recall that Ricardo, when a member of the House of Commons, voted for the introduction of a high tax on imported cereals ! ! !

Happily, with our theory, we never can come to such jugglings with reality

Our theory being precise and elastic at the same time, allows us to say exactly when, from a strictly economic point of view, it is a case of admitting protection or free-trade

Naturally, once we have listened to the words of the economist, we may also listen to political or other reasons But they must follow when the economic ground has been cleared

(86) One remark thrusts itself upon these rather absolute conclusions. They are not tinged with social and other considerations which cannot be neglected in the protection problem

As with every conclusion drawn from a theory, ours must be adapted to the infinitely complicated contingencies of life

Free-trade advocates as a strictly theoretic conclusion drawn from the principle of the division of labour that each nation must restrain its production to two or three branches in which it has the greatest superiority compared with abroad or—at least—a lesser inferiority compared with abroad.[1]

This is obviously a conclusion which must be tempered by social and other conditions Fabien Koch (*op cit*, p. 13): "To utilise all the possibilities of production even in a single country is practically impossible. It is evident that these possibilities are unlimited It is not possible to find a single stone which could not be utilised for productive purposes But the question is not to utilise the resources of a country so far as is theoretically possible In reality, it will be more profitable to use only some of these resources and to use them in the best possible manner."

In the free-trade theory, customs taxes are admitted for reasons foreign to strictly economic arguments. Gruntzel (*op.cit*). "It is strange that there is no free-trade theory which does not leave a little open door for protection"

In our case, it is the opposite.

Our strictly theoretic conclusion advocates that a nation

[1] According to this conclusion, says Patten, the United States would need to produce only cotton, tobacco and corn

Moreover, the practical absurdities of international trade conclusions are by no means exhausted

Here is another evident example

England is superior to Russia in industry (see par 24), accordingly the respective productivities are in the proportion £102 · £21 5 = 4·75, but its superiority over Russia is even greater in agriculture (the respective productivities are in the proportion £65 . £5 5 = 11 8)

So, according to Ricardo's conclusions, Russia would need to devote itself exclusively to industry, in which it has a least comparative inferiority, and England would need to devote itself exclusively to agriculture, in which it has a least comparative superiority!

must concentrate its activity round those production branches of which the productivity is greatest. Of course, the criterion of productivity alone is not sufficient to establish new and isolated industries in a country.

There are annex industries which must arise whatever their productivity, small or great, beside other existing industries the legitimacy of which is proved by our criteria

There is also the national tendency towards the vertical series of industries able to make its way in spite of productivity criteria.

This conclusion must be adapted to reality.

The excessive protection it may seem to recommend must be restricted by social and other considerations divorced from strictly economic arguments.

But the difference between the two theories is enormous According to the free-trade theory, protection has no other legitimacy than as a concession to the social point of view; according to ours, protection, legitimated (within the limits of our theory) from the economic standpoint, is reduced and limited by the social standpoint [1]

[1] After having put the bases of protection in the best light, we think it might be interesting to pause a little upon anti-protectionist writings and note some exaggerations

When exposing the protectionist principle, SUMNER (*op cit*, p 164, exclaims:

"If this is not socialism, then socialism no longer exists," and adds that "if employers ask the State to guarantee 'their profits,' why should workmen not ask for their wages to be guaranteed?" Once more, free-trade turns into demagogy

Protection does not guarantee the employer's profit it guarantees the existence of enterprises which raise the productivity and the welfare of the country through their activities

BASTIAT (*Protection and Communism*, 1840) writes "Generalising protection leads to communism, just as the chrysalis leads to the butterfly," and, further on. "Protection is not merely communism, but the worst sort of communism"

Why the worst sort? "Because it takes from those who have not, to give to those who have."

And CAREY uses the same expression (*op cit*, Vol. III, p 447), but in an opposite sense He pretends that free-trade is real communism because it undertakes at the expense of all other countries the keeping of a single country, England.

The charges of communism and socialism are the usual charges brought against any regulation which interferes with the social order, against any attempt at social logic

The proof of legitimacy of such interference no longer belongs to our epoch

It would be useless and tedious to revert to an old discussion, where contradictions no longer exist.

(87) Up to the present we have taken for granted that international prices do not change (see par 33), whatever may be the distribution of the different productions in the country taken as an example

Our supposition also tacitly and implicitly included another hypothesis we never attempted to discover how a country manages to secure its requisite supplies of goods We always supposed that the rest of the world could and must supply all the country required, since the country was able to pay for all with the exchange goods it produced

Both our hypotheses (1) Everything can be got if there is the wherewithal to offer for it, and (2) the country taken as

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The principle of interference is an acquired contemporary fact

We may quote ·

R Russo (*Le communism*, p 192) :

" After all is said and done, protection is socialism reversed "

The least " scientific " epithets are not spared to protectionism

For instance, let us quote William Graham Sumner (*Le Protectionnisme*, Guillaumin, Paris, 1886, p iv, preface)

" This is so shameless a specimen of economic charlatanry, it imitates with so much affectation science and philosophy that it must be dealt with as other charlatanries "

Sumner (*op cit*, p 72) ·

" A protected manufacture is not a productive industry It is a consuming industry. The more important it is the more grievous "

Sumner (*op cit*, p 79)

" Under the protectionist regime ' natural resources ' become national calamities which measure the misfortunes of a country by the extent of favours which it has received from Nature."

Sumner (*op cit*, p 37) ·

" Protectionist taxes are taxes which a man pays to his neighbour in order to induce him at a money cost to mind his own business The former receives no equivalent "

The last lines are very significant

They are due to the unilateral consideration of protection under the aspect of the phenomenon of distribution

From the outset we strictly separated the interior aspect from the exterior aspect (profit of the whole country)

We quote the same author again

Sumner (*op cit*, p 76) .

" Protection allows us receipts, yet increases our expenses, it gives us a debit and allows us a credit "

In reality a protected industry requires a *visible* sacrifice and offers a country much greater *invisible* advantages

Sumner, ignoring the great rôle of superior industries, exclaims

" Protection does not depend on one form of industry more than on another "

But the crown of our quotations is from Bastiat, who sustains that there is no difference between customs and a thief who seizes on its way, a part of the iron Belgium is sending to France.

our example cannot influence world prices, whatever may be the alterations in its production and its foreign trade, are not very far from practical reality

Indeed, our hypotheses are not merely abstractions; they represent the case of any country—small or average in size—compared with the rest of the world.

Thus, the conclusions we have drawn from these hypotheses are perfectly true for this kind of country

(88) But to arrive at more general results, we must go one step further, and approach reality by introducing an element of complexity

The problem is now the following

When, according to all our conclusions, every nation and every country now backward in the production of industrial articles begins, under cover of protection, to turn out industrial products of an increasingly fine quality and higher productivity, what influence will this now general phenomenon have on the satisfaction of human necessities and on the evolution of prices?

It is not difficult to answer Concerning the satisfaction of necessities—that is, provision for humanity—there is nothing to fear It will never happen that humanity in producing too many goods of high quality (with great productivity), will forget to provide for itself the necessaries of life.

The regulation of the quantity of the necessaries of life occurs automatically through the constant mechanism of prices

So the second point of our problem must be a research into prices.

As a whole this problem is not too intricate, although very delicate in its details.

When, thanks to protection in all countries, the development of industries, and especially of industries with great productivity (notably those which can be adapted to small markets which we shall deal with in par 110), will supply the world with an enormous quantity of industrial products, prices of industrial products will fall very much in com-

parison with prices of other produce and services, and especially in comparison with prices of agricultural articles and raw material [1]

Of course, this evolution will be gradual, and it will have as basis the perpetual multiplication of the means of industrial production in the world

Prices of industrial articles falling continually and prices of agricultural produce and raw material increasing relatively at the same rate, show that the respective productivities, which are merely the value of goods referred to the labour producing them, will vary in the same manner

The first effect of this evolution will be a fall in the productivity [2] corresponding to industrial activity and an approach of this productivity to agricultural productivity

Critics may say that this is our weak point. Pursuing the "fanciful" idea of continual rising on the productivity scale, and encouraging all countries to act in the same way, we can only come to a general fall of industrial productivity. The ladder on which we are all mounting, in emulation of each other, will begin to slip down, and will draw us all down with it!

But, happily, if the prices of industrial articles fall in the world, the absolute productivity of industrial activity (measured in goods units) will still be the same, or will even increase. It is only the *relative* productivity of industry which falls in relation to agricultural productivity.

[1] It is very remarkable that there are important causes of delay in the tendency for prices of industrial articles to fall

The most important is the relatively larger elasticity of the market for industrial articles than of the agricultural market

We have already seen that the consumption of industrial articles is capable of great expansion, so as soon as the prices of articles begin to fall the world market gains in expansion and these prices may be kept up for a long time without a further fall.

Moreover, the fall of prices always attendant upon greater industrialisation is concomitant with the automatic extension of consumption of industrial articles, since industrial countries are always the greatest consumers of industrial articles (see par 126)

[2] The productivity in question is as we have measured it in exchange value, so, for a certain moment and for a certain equilibrium in the life of humanity, *in money*

Productivity considered in units of goods will increase according to the technical improvements in industry, but it is the exchange value (the price) of each unit produced, in relation to all other produces, which will diminish.

But this levelling phenomenon is a comforting fact which means a happy evolution in the life of humanity.

Moreover, it is the most characteristic fact of modern civilisation [1] (see pars. 133 and 137)

(89) But, on the other hand, all the evolution of prices brought about by the great industrial transformation prepared by protection will in no wise change the conclusions established by our theory.

What we concluded for a small or an average country without influence upon world prices will remain valid for a large country or for a group of countries whose industrial policy, according to protectionist views, would influence prices in the direction of their fall for industrial articles

Indeed, in this case there is an attenuation of the difference in the productivity scale (the productivity scale and the productivity pyramid described in pars 16 and 27 will, as it were, flatten), but in spite of their attenuation these differences will continue to exist, and it will always be to the interest of a country to " push " its production as high as possible on the productivity scale.

All our reasonings will remain the same, only the productivity coefficients will be different, after the evolution of prices Protection will always be necessary But certainly not to the same degree as to-day.

When the differences between extreme productivities in the same national economy are not as great as they are to-day, concentration upon the most productive activities which protection requires will not be as necessary as it is now.

But the part played by protection will never end, since there will never be a perfect levelling of the productivity of all industrial and agricultural branches of a country's production.[2]

[1] CAREY, *Principles of Social Science* (three vols, 1861, Paris, Guillaumin, Vol I, p 492)

" The bringing together of the prices of raw materials and of finished articles forms the essential object of civilisation."

[2] Using not only the old arguments and those of the physiocratic school, but also arguments drawn from the evolution of prices in agriculture and industry, one might be entitled to say that agricultural productivity is not inferior to industrial productivity

The well-known theory that diminishing output in agriculture leads to a rise in prices of industrial articles, brings about by their indefinite multiplication, in a slow evolution, a continuous fall in prices

It has been thought that the epochs when industrial goods are " more in demand and of greater value " do not last and that a " doctrine cannot be based on their temporary existence "

Our assertion concerning the tendency of the fall of prices of industrial articles, made in the interests of scientific truth, cannot destroy our productivity theory.

This would involve a serious inconsistency

It would, indeed, have been very imprudent of us to insist, as we did (pars 88 and 89), upon the evolution of world prices which cause industrial productivity to fall and agricultural productivity to rise all through the centuries, if this assertion would ruin our entire theory

But this phenomenon has not a temporary existence, its time-honoured variations are produced as follows —

Leaving aside the discontinuities produced by accidental events, such as the Great War, the line of the economic evolution of humanity shows a continuous fall of industrial prices, therefore of industrial productivity, with a rising of agricultural productivity.

This evolution takes place so gradually that all through the nineteenth century the superiority of industry predominated in all countries

As we showed (pars 20–25), it predominates to-day also, since in 1910 in the United States industrial productivity was 2 10 times greater than agricultural productivity.

This space between agricultural and industrial productivity is still very great, especially in backward agricultural countries like Russia and Roumania, and although there is a general tendency towards the diminishing of this space, all variations are so gradual that only after many centuries will the agricultural productivity of these countries be able to approach nearer to the industrial productivity.

One thing is certain that if there is to be any near approach between agricultural and average industrial productivity this approach will not occur in all industries, and there will be industries which, owing to the perfection of their machinery, owing to the uncommon skill of those who manage and organise them, or owing to the exceptional qualities of all the labour they require, will maintain themselves at a far superior productivity level compared with the average productivity of other branches of production.

Moreover, a complete equalisation would mean an equality of social opportunity for all productive activities, and almost a levelling of the standard of life, and this levelling would mean that all progress would cease

In truth in this productivity of the different branches of activity lies the source not only of social iniquities and inequalities between nations but unquestionably also the principle of eternal stimulation and selection

We owe the present geographical and political aspect of human civilisation to the ancient inequality between industrial and agricultural productivity.

We owe to it the enormous difference in the wealth of industrial countries as compared with agricultural countries, and it also explains why the latter are politically dominated by the former When slavery, or direct exploitation of one country by another ceased, the place of slavery was taken by exchange slavery In this way the labour of a day by one Englishman was exchanged for the labour of a day of 20, 30, or 100 workmen of other countries and continents

This exchange, carried on now for over a century, since the beginning of the industrialisation period, led to the enormous accretion of wealth by England and all western Europe

These facts will give rise to much reflection

PART III

REALITIES AND CONCLUSIONS

CHAPTER I

CONSEQUENCES OF THE THEORY OF PROTECTION

National Profits and Losses, due to Variations of Productivity.

(90) The classic principle of free-trade, which does not attempt to be a postulate but a conclusion, pretends that under a system of free exchange each country puts its capital and labour into those enterprises which are most advantageous.

We have managed to clear up a little the question of what advantage in production means or does not mean for a country

We have seen that there is only one decisive way of appreciating the real advantage of a branch of production : it is its productivity as we have defined it

But what is the actual situation of the different nations of the world? There are nations which produce goods of great productivity beyond their requirements and export the surplus; there are nations which produce very few or even none of these articles, and must import them.

In the former countries the average productivity per workman is much greater than in the latter

Therefore each country has a certain average level of productivity; this productivity is the main element of its economic constitution.

In a graphical representation on the map of the world, all countries would look like plains with different altitudes, these altitudes corresponding to the different degrees of productivity of each country.

America, England, and Belgium would be represented by high table-lands; the Far East and Near East would be on a very low level.[1]

[1] We would thus have a world representation of the economic situation much more adequate than the configuration given by customs limits under the form of high mountains at the frontiers of each country.

The average altitude of all these table-lands is the general level of human productivity

According to the free-trade theory, the distribution of activities in the whole world is, by customs protection, effected in such a manner that the general level of human productivity is lower than it would have been if free-trade had been general.

Protection would therefore be an impediment were nations to concentrate upon the most profitable activities.

We believe that we have shown—and we shall return to this later—that it is protection alone which gives nations with a small degree of productivity the possibility and liberty of increasing their average level [1]

On the contrary, free-trade, by preventing countries from raising the productivity level, becomes for them a system of constraint.

Summing up :

> Protection is liberty.
> Free-trade is constraint.

(91) But it might be said that this conclusion, however true, is only valid for countries with an inferior productivity, and that in countries which, thanks to natural and historical factors, have already reached a sufficiently high degree of productivity, it may cause a lowering of their own productivity.

The level of their " table-land " might fall.

This is a very serious objection worthy of consideration

In order to give a clearer idea, we will take again the classic example of Portugal and England.

We shall take Ricardo's example, modified to suit economic

[1] It might be objected that, in spite of the power of industry to raise considerably the productivity of the workmen it employs, the influence of this elevation on the average level of a country's productivity is not very great in view of the small number of industrial workmen, and, on the contrary, agriculture, increasing its productivity by means of improvements even to a small degree, would influence much more the average level of the country, in view of the large number of workmen

Moreover, even in industry, it is much easier to found a new and more productive branch than to increase the productivity of an existing one.

realities (see par. 49), where the order of productivity is as follows:

ce = Cloth in England (100 workmen)
cp = ,, in Portugal (110 ,,)
wp = Wine in ,, (130 ,,)
we = ,, in England (150 ,,)

At the same time we must suppose [1] that equal exchange values of these four goods are produced by employing respectively 100, 110, 130 and 150 workmen. We shall denote this common exchange value, "V"

In England under a free-trade system there would be merely cloth produced; in Portugal, merely wine, because Portuguese cloth would not be able to compete with English cloth, and English wine could not compete with Portuguese wine

This solution appears to be the best one for both countries, as both are supplied with the cheapest cloth (per 100 workmen) and wine (per 130 workmen).

But only apparently is it the best solution, and only from the point of view of supply [2]

From the synthetic point of view, which is also that of productivity, it is not the same thing. In fact, while England has reached maximum productivity, because it produces goods at the highest productivity (cloth), Portugal is far from this maximum, because it produces goods with less productivity (wine) than possible maximum (represented by cloth).

Therefore the solution of free-trade is not the best solution from the integral economic point of view.

(92) We have shown that apparently and only from the exclusive standpoint of supply, the system of free-trade represents the best solution on the whole for both countries. Both countries consume the cheapest cloth (100 workmen) and also the cheapest wine (130 workmen).

[1] In order to make this example more concrete we have introduced the figures 130 and 150 for the respective productivities of wine

[2] We have already developed completely the distinction between the strictly commercial standpoint and the trade and production standpoint (called by us the *synthetic* point of view, but which could also be called the *integral* economic point of view).

But to be able to judge the advantage of a buying operation between two countries, one must also examine (see par. 36) the exchange goods which are exported.

It is only in regard to the whole operations—buying and production for exchange—that we can speak of the best economic solution

Now, from this point of view, England consumes cloth (100 workmen) produced at home, and wine (130 workmen) imported from Portugal, paid for with its cloth (100 workmen), consequently England performs two profitable operations, the first having a virtual advantage over Portugal, whose cloth has less productivity (110 workers); the second presenting a *real* disadvantage.

The average degree of England's productivity is therefore 100 workmen for the exchange value, *V*.

On the contrary, Portugal consumes wine (130 workers) produced at home, and cloth (100 workers) imported from England, which is paid for with its wine (100 workers).

Therefore Portugal performs two disadvantageous operations: the first having a *virtual* disadvantage in comparison with England, where cloth has a larger productivity (100 workmen); the second presenting a *real* disadvantage.

The average degree of Portugal's productivity is therefore 130 workers for the exchange value, *V*.

The free-trade solution is far from being the ideal solution for both parties, as asserted by free-trade doctrine.

(93) What happens under the protectionist system?

Under protection, which by a sufficient customs tax will allow Portugal to compensate for its inferiority towards England and to produce cloth for home consumption, the situation will be:

England will continue to consume the cheapest cloth (100 workers) and the cheapest wine (130 workers); Portugal will continue to consume its own wine (130 workers), but as regards cloth, it will manufacture all it requires.

This solution is not the best from the exclusive point of view of supply, because in Portugal the cheapest cloth which may be obtained will not be consumed, but dearer Portuguese

cloth (110 workers) instead of cheaper English cloth (100 workers).

But what is the situation from the point of view of production?

In Portugal, a number of workmen, *I*, will be required to produce cloth and will cease to produce wine.

Instead of keeping up a disadvantageous exchange by exporting wine (130 workers) for cloth (110 workers), cloth will be produced at home (100 workers) and the production of wine (100 workers) for home consumption will continue.

The average degree of Portugal's productivity is no longer that corresponding to 130 workers for the exchange value *V*, but a superior degree standing between 130 workers and 100 workers—say, one that corresponds to 125 workmen for the exchange value *V*.

But what happens in England at the same time?

Production of cloth has had to diminish by the amount hitherto consumed by Portugal, thus a number of workers are freed for other occupations.

The remaining workers continue to produce cloth (at 100 workers) for home consumption and for export to other countries excepting Portugal

The change in the general level of productivity of both countries depends exclusively upon the activity which is displayed by the *I'* workers who are freed by the decrease of cloth production in England.

(*a*) If these English workers start a new activity with a superior productivity in cloth manufacture, England's general level of productivity will increase.

In this case protection applied to Portugal brings about an increase of productivity, both in Portugal and England.

So the free-trade solution is far from being the best one.

(*b*) If the above English workers, however, should be occupied in an activity with inferior productivity to the manufacture of cloth, the level of productivity in England will decrease.

Nevertheless, if this activity of an inferior productivity does not go beyond a certain lower level, then, although the general level of productivity is lower in England, there still

is, for the two countries as a whole, a compensation, due to the higher level of productivity in Portugal; so that the average productivity still remains higher than the one reached under free-trade

In short, as long as the new activity of the unemployed English workers I' remains above a certain level, the increase of the productivity of the I Portuguese workers is superior to the loss of productivity through the I' English workers, and what is gained on one side is greater than what is lost on the other.

(*c*) When this inferior level is passed over the loss is greater than the profit, and for both countries as a whole there is a decrease in average productivity.

(94) What is this limit of which we have been speaking which separates case (*b*) from case (*c*) ?

A first indication may easily be given ·

From the moment that I Portuguese workmen produce with a smaller output the same quantity of cloth as I' English workmen, it necessarily results that I is bigger than I', and that the workmen who were freed in England are fewer than the workmen engaged in a higher productivity in Portugal

It means that if the I' English workmen undergo a negative displacement on the productivity scale of exactly the same size as the positive displacement on the productivity scale that the I Portuguese workmen have undergone, the loss caused by the former will be smaller than the increase realised by the latter.

For the whole there would always be a small advantage, and the average productivity of both countries will be slightly increased.

Therefore there is an equality (or a small advantage) under protection compared with free-trade, as long as the qualitative progress obtained on the productivity scales by the Portuguese workmen is followed by a slight qualitative regress suffered by the English workmen who have been obliged to change their occupation.

(95) If, as we have already said, we denote the common

exchange value V, the production of a Portuguese workman in wine is $\frac{V}{130}$ and the production of the same in cloth will be $\frac{V}{110}$.

The increase of net production of the I Portuguese workmen who have left the vineyards for the cloth factory is :

$$\Delta = 1 \left(\frac{V}{100} - \frac{V}{130} \right).$$

And now if the limit of production of an English workman who must change his occupation is such that the value V is produced by X workmen, then the productivity in cloth of an English workman being $\frac{V}{100}$, the loss in production of all I' English workmen will be

$$(1) \quad \Delta' = I' \left(\frac{V}{100} - \frac{V}{X} \right)$$

In the limit case the loss of English output must equal the increase of Portuguese output, therefore $\Delta = \Delta'$.

On the other hand, the number of workmen I and I' in both countries being for the same output in inverse ratio to the number of workmen employed for producing the value V, we shall have :

$$(2) \quad \frac{I}{I'} = \frac{110}{100}$$

Combining (1) and (2), the equation may be solved, and we shall get $X =$ (approximately) 118

Therefore the limit down to which the English workmen may diminish the production of cloth (100 workmen) is the production of an article by 118 workmen for V.

Above this limit, the loss for England is smaller than the gain for Portugal, and the solution of protection is for both countries superior to that of free-trade.

(96) This conclusion has a wide range

For the increase of productivity for backward countries is much more important when they pass from an agricultural to an industrial occupation, and the positive displacement on the productivity scale is very large

The result is that the negative displacement which at the same time influences also industrial countries can be considerable without there being any net loss as a whole for the countries, or better for the whole of humanity [1]

We can illustrate this conclusion with the concrete figures of our example.

If the productivity corresponding to Portuguese wine be (instead of 130 workers for unit V) 200 workmen for unit V, the positive displacement of the I Portuguese workmen leaving the vineyards for the cloth factory (at a productivity of 110 workmen for unit V) would be much more considerable.

Calculating as before, we shall get in this case that $X = 180$, that means that the I' English workmen who must change their occupations may suffer, without much loss for both countries, therefore for humanity, a big negative displacement, passing from the productivity of 100 workmen per unit to one of 180 workmen per unit

(97) We have mentioned (see note, par. 79) John Stuart Mill's recommendation to countries which cannot produce goods in the same conditions as their competitors to abandon this unsuccessful branch of production, "retaining the available labour and capital for producing other things."

This recommendation is intended for backward countries which, desiring to pass from an inferior (agriculture) to a superior (industrial) productivity, are incapable of resisting the competition of industrial countries.

We have already examined whether this recommendation is applicable to those countries, and in what manner.

Our immediate demonstration authorises us to state that new industrial countries limit the markets of older industrial

[1] We cannot sufficiently insist upon the importance of this conclusion Both countries as a whole do not necessarily reach their maximum production under a free-trade system On the contrary, under a protectionist system there is a better chance to realise the highest production for the whole

countries, and therefore it is to the latter that this recommendation should be made.

The tendency to raise the productivity of their labour is so natural for backward countries, it is so much "in the order of things," that one could not lightly recommend such countries to develop a superior activity (even with the weakest relative output) in order to produce "something else"

But if—as we have proved—as a consequence of this natural and irresistible tendency, industrial countries lose a part of their markets and remain with a certain number of workmen unemployed, the problem of producing "something else" is set for those countries

What we want to underline now is the fact that, from the logical point of view, the search for this famous "something else" devolves upon industrial countries which are progressively losing their markets, but not upon nations which are in course of becoming industrialised, whose national right it is to increase their productivity (at least in so far as to satisfy the home demand for each article) (see par. 105).

Import, Export and the Balance of Trade examined from the Standpoint of Productivity

(98) As we have already shown, our central idea lies neither in the amassing nor preserving of gold, but in *the economy of national labour.*

According to our theory, the unit of national forces is represented by the labour of a workman during a year, and our aim is to look for its best value in international exchange. There are production branches which are *skilled,* in which the produce of the labour of a single man in one year buys abroad the produce of the labour of several workmen in a year There are also branches of production which are *unskilled,* in which the produce of the labour of several men in a year is required to buy abroad the produce of labour of a single man in a year.

In this new conception of the value of international exchange lies the key to the advantage or disadvantage of

international exchange This balance is quite different and has a deeper economic meaning than the balance of trade

A balance of gold is not in question, but the balance of the exchange of labour which makes nations with rudimentary economies the slaves of industrial nations

For we must bear in mind that when the labour of five or ten workmen is bought with the labour of a single man, the standard of life of this worker will be five or ten times as high as the standard of those who produce the exchange-goods.

This is the exchange problem with which is connected the problem of general wealth and prosperity, measured in the tangible realities of goods and satisfactions, and not, as in the mercantilist school, by the means of gold.

The notion of quality applied to the imports and exports of a country leads us to quite new conclusions concerning foreign trade [1]

[1] In regard to our demonstration, it might be objected that the important thing for a country is not the productivity of the country as a whole, but only the productivity of exportable goods, because only those concern international trade

We must therefore observe the productivity scale of the exported goods and base our reasoning upon it

Let us examine the foundation of this objection This will also give us the opportunity of better explaining our ideas about the demonstration already made

We have established that, when giving up the production of a new article in a country and deciding to import it from abroad, we must look for an article of greater productivity than the former, for which it must serve as payment (see par 78)

Now, as we are speaking about exportable goods, we must get it from the table of export goods, classified according to their degree of productivity

It would therefore seem that if, instead of an article for export, we could produce for home consumption an article with large productivity, our aim would not be attained, since the latter article could not be exchanged abroad and would not be able to play the above-mentioned part.

But the reality is far from this semblance, and we shall show that in giving up the production of new goods at home, and producing goods of superior productivity, it is quite indifferent whether these goods are for export or for home consumption

In fact, if we give up home production of the new goods *A*, refusing them protection, it is because we can produce with the same productive forces (workmen and capital) goods of a superior productivity *B* which will give us the opportunity of buying abroad a larger quantity of goods *A* than we could have produced at home

But if goods *B* are consumed at home? Then the fact of having produced these goods causes a decrease in import of these goods

But by diminishing the necessity for importing goods *B*, we leave a free place, already paid for, for the import of *A*, exactly as if we had produced *B* for export

If P represents the production of a country, E the export, and I the import, the home consumption is represented by $P + I = E$.

Further, if pg is the general average production of the country, pe the average productivity of the exported goods, and pi the average productivity of the imported goods, we may distinguish in the economic structure of a country two or three typical cases [1]

(99) There is first the case of England and industrial countries which import food and raw materials (both of low productivity) and export highly industrialised articles (of

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So the final result is the same, even if B when exported increases the value of exports, or B is consumed at home, diminishing imports to the same value

The increase of export and the decrease of import in both cases are equal, and, what is very important, have both been obtained by an operation of high productivity

The result is therefore quite clear, that if it is a question of getting goods B to replace goods A which we do not want to produce at home, it is quite indifferent whether goods B are on the table of goods exported or on the table of goods consumed, it is sufficient if they are part of the national production

It is therefore on the productivity scale of the total production that we must get the goods required, without considering whether they are consumed at home or exported It is the structure (the pyramid) of the whole production of the country which must be considered, and not its export structure

[1] According to TAUSSIG (*op cit*, p 504), in order to find out if an article is dearer in one country than in another, there is just one decisive method . the level of productivity of exported goods

He asks, for instance, whether furniture is dearer or cheaper in America than in Germany .

" The answer depends on the efficacy of American labour which produces it " " If American labour is *just as* efficient in this direction as in that of exported goods, the furniture will not be dearer "

And further on

" The principle is home merchandise for which the labour of the country has the same degree of efficacy which it has in the production of exported goods will be *relatively* cheap, to the same extent goods exported are relatively cheap "

In other words, the real " national money " is the productivity of export goods

With this productivity we measure the relative advantage of producing goods or buying them abroad Goods produced at home with a smaller efficiency (productivity) than the efficiency (productivity) of export goods are dear It is better to import them

Goods produced at home with a larger efficiency (productivity) than the efficiency (productivity) of export goods are cheap It is better to produce them at home

These are ideas of cheapness and dearness in their exact conception which means the more or less efficient labour which corresponds to them

high productivity); as regards their own productivity (largely industrial and to a small extent agricultural), it is placed between the two degrees of productivity. The economic situation of these countries is summed up in the formula:

$$pe > pg > pi$$

For an average lot of exported goods exchanged for an average lot of imported goods, such a country has a positive and concrete advantage in this exchange, because it obtains with goods of large productivity goods of small productivity [1]

The natural tendency of such a country, and the sign of its progress, is (leaving aside its home consumption) to increase perpetually the difference (pe—pi) between the two average productivities

The quality of exports and imports of a country may be appreciated generally in statistics by the proportion the manufactured articles assume in the total exports.

According to Mr Pierre, *Journal des Economistes*, July 15, 1928, in 1927 the proportion was as follows.

	Exports	Imports
Great Britain	79 5%	24 4%
Germany	73 9	17 4
France	59·5	10 9
Belgium	57 7	22 7
U S A	40 6	20 5

From this table we see the great advantage England and Germany have through the high quality of their exported goods, and the advantage accruing to France from the low quality of its imported goods!

Where this difference of quality (pe—pi) cannot be increased, the total value of foreign trade (both import and export at the same period and to the same degree) must be increased,

[1] Taussig (*op cit*, p 502) —
"The importance of the profit to a country from international trade depends on two causes first, the conditions of international exchange as they have just been applied, afterwards, the efficacy of its labour in the production of the goods exported"
The same author says in another passage
"The determining cause of the general level of incomes and wages in money in a country is to be found in the exporting branches of industry"

as with such increase of exported and imported goods the difference representing the national advantage is increased.[1]

This last remark is extremely important.

An increase of foreign exchange looks like a positive advantage for a country.

Without seeking, as do the mercantilists, the advantage of foreign trade in excess of export over import, and supposing a perfect equality between export and import, it may be seen that foreign trade for the countries of the type we are considering (like England) represents a positive advantage which increases as the amount of this trade increases.

It is therefore not surprising that English economists have always praised the advantages of foreign trade , for countries like England foreign trade is a positive and perpetual advantage.[2]

(100) Let us examine now whether for other types of countries it is the same.

The second type of countries is that of agricultural countries, such as Russia or Roumania, which export cereals and raw materials (timber, etc., all of low productivity) and import industrial articles (of high productivity)

Their own productivity, almost entirely agricultural, and very little industrial, is placed between the two degrees of productivity determined above.

The economic situation of these countries is summed up in the formula ·

$$pe < pg < pi$$

For an average lot of exported goods exchanged for an average lot of imported goods, such a country suffers a clear disadvantage, because it obtains for goods of low productivity, goods of high productivity.

The natural tendency of such a country, and the sign of its progress, is (home consumption remaining the same) to

[1] Of course, national advantage is measured according to the labour economised

[2] Taussig (*op cit*, p 503).

" The profit of large revenues in money results, as has been sufficiently explained, from the low price of imported goods "

decrease perpetually the difference (p_1—p_e) between the two average productivities [1]

To decrease this difference, the country must export more and more goods of high productivity and import—if possible—goods of low productivity

Supposing that this difference of quality (p_1—p_e) cannot be decreased, nothing is left but to diminish the total figures of foreign trade (import and export at the same time and at the same rate), because at each decrease of importation and exportation, the difference representing the loss or (to be more exact) the national disadvantage is diminished [2]

Under this system, Ireland loses more labour in one week than it would require once and for all to create the necessary modern industrial plant which might increase its production, in the same way, Portugal and Turkey lose in one day more money than they would require for creating all the industrial machinery needed to found a national industry in cloth.

No doubt there are some exaggerations; but it is none the less true that from the consideration of practical examples for verifying Carey's conclusions we may arrive at interesting results.

Take, for instance, the case of Roumania's textile industry.

This industry employs 30,000 producing agents, each having a net production of 2000 Swiss francs per annum, therefore in all 60,000,000 Swiss francs

The capital invested in this industry is 86,000,000 gold francs.

If this industry did not exist, the 30,000 labourers would produce in any other occupation only 750 Swiss francs each, since the average productivity of the country is about this figure, therefore their total production would be 22,500,000 Swiss francs

The result is, therefore, that the existence of the textile

[1] By the light of these assertions Bastiat's following affirmation has a strange aspect

"Those countries whose industrial inferiority is greatest will derive the greatest advantage from freedom of trade"

[2] CAREY (*op cit*, Vol III, p 51) makes the following remark

"Free-trade preaches to backward countries not to spend money on the development of factories and industries, and to continue blindly to produce inferior products"

industry brings in, to the economy of the country, a clear profit of 60,000,000 — 22,500,000 = 37,500,000 Swiss francs, this profit represents 44%, so almost half the total capital of 86,000,000 Swiss francs invested in this industry !

This conclusion is really astonishing

If Roumania had not this textile industry, it would lose in just two years as much as it would require to find the whole machinery necessary for the existence of this industry.

Under such conditions foreign trade does not seem to be an advantage But if the imports are equal to the exports for countries of the type we have considered (such as Russia), foreign trade is an unavoidable evil.

It is a necessary operation for the life of a country, but it is disadvantageous,[1] and should be diminished where possible [2]

The contrary would be absurd—although the contrary often exists [3]

[1] We have only found a trace of this idea in Hecht (*op cit*), who, having in view the capital distinction between skilled and unskilled labour, draws the correct conclusion that the very excess of exports over imports may hide a loss for a nation

[2] SCHMOLLER (*Allgemeine Volkwirtschaftslehre*, II, 1904, p 697)

" They (free-traders) forget that free-trade without any restrictions between all countries produces larger and larger sales and a constant economic prosperity for countries favoured by nature and by historical development, but in the case of countries neglected by nature, free-trade may very easily rob them of their industries, or even, in certain circumstances, of a part of their population

" It is therefore natural that in those countries (such as Roumania and Russia) one cannot have the same enthusiasm for foreign trade as in countries of the other type (such as England) "

[3] Mr Loria seems to be right in the following observation Stressing again the comparative difference between the production of the same goods in two different countries, he recognises that comparative superiority is sufficient for creating exports Indeed, the impulse to international trade is given by the difference in cost of the same goods in different countries, as from this difference comes the possibility of profit to the manufacturer

But if the dynamic power of international trade is a consequence of comparative advantage, this does not mean that the movements of international trade correspond to the final real advantage of nations as a whole

When Roumania exports maize and imports machines, the merchants have a profit, but if we reckon how small is the productivity of maize (that is, how small is the total national profit or the total individual profit in the production of maize) and how large this productivity would be if Roumania could itself make the machines it must import, then certainly this import-export trade would no longer be advantageous for the nation

We do not deny that export is practised, but we deny that it is practised under profitable conditions for the nation

(101) In those agricultural countries of which we are speaking, economics, as other fine products, are also imported.

Therefore they do not form a national science. It is the science of others, particularly of those who are in a quite opposite economic situation and who naturally and unconsciously stress the benefits of foreign trade, which are not general, but particular, for each country

We realise that the assertion we have just made is the most audacious in our whole work

But our conclusions are simply the logical and natural result of using the idea of productivity for appraising importations and exportations, which upsets current conceptions, in virtue of which only the balance of the world exchange values is considered.

In our demonstration, the positive or negative differences in the balance of trade do not alone play a part. What counts in the progress and welfare of a country is the quality of the exchanged goods.

(102) What in the outline of these principles is the conception of the balance of trade?

We shall discuss merely the normal case; that is, where the balance of trade is in equilibrium and the national currency is stable

In this case, the imports and exports represent two compensating items figuring on opposite sides of the balance sheet.

The fact that exports are large, or that imports are small, proves nothing.

Neither one nor the other is good for national economy.

What matters is that the total of the credit items (exports and sundries) should balance the total of the debit sides (imports and sundries). How the total debits and credits are distributed among the various heads is immaterial

It follows from the foregoing that the excess of exports over imports is not in itself an advantage to be sought after in all countries.

It is true that where such an excess exists, it may be regarded as a credit balance in the balance of payments, but

only if isolated from the other heads comprised in the general balance of trade.

Now if, on balance, the other debit and credit items comprised in the general balance of payments, properly so called, show a credit, then the net result will certainly disclose a creditor position [1]

If, on balance, these items show a partial debit which is not greater than the partial credit items of the balance of trade, the balance of payments will always be overweighted.

So if in certain countries we try to have a credit position in the trade balance, it is because we already know that a partial balance of the balances of payments can only be negative or slightly positive and can only be compensated by a clear credit in the trade balance.

It is useless to speculate long about this. The question regards two tables, each of them including several points, the totals of which must balance.

Any consideration about the different sizes of the different points, or the difference between them, is purely arithmetic.

(103) The economic problem begins there : the connection between the physiognomy of these two tables and the enrichment or impoverishment of a country.

[1] Must a country be satisfied to base the equilibrium of its balance of payments on " invisible exports " which are only the interests of capital invested at home ?

Are these invisible exports of the same economic nature as real exports ? Not at all

Real exports are the result of present activity of a nation, while invisible exports are the interest on capital invested abroad—as a result of the activity of the nation in the past

Now, if a nation wishes to be assured of living on its present as well as its past, it must try to pay its imports with its exports as far as possible

As to the interest coming in from capital invested abroad, this may remain abroad, being compensated by fresh investments abroad which would increase the inalienable national patrimony (capital and interest) invested in other countries

For a nation which is becoming rich it is only natural that this capital must be intangible, and must increase by the fluctuation of interest at the time the nation is progressing and becoming more exigent owing to the greater complexity of modern life Let us quote Francis, *op cit*, p 116, on this matter

" These interests (of national capital invested abroad) represent a natural growth *and must be considered themselves as capital* "

And further on, p 119

" They are the provision which each nation, by its sense of responsibility, is obliged to accumulate for following generations."

To say that export makes a country rich and import impoverishes it, is nonsense

The total of exports and imports show the accounts of the business of a nation It is the same for the points of the balance of payments

Now the accounts of the business of any concern do not give us an idea of its profits One may only normally suppose that profit grows when the total amount of business increases

For some countries, as we have already seen, even this supposition may perhaps be inexact (see par 100).

The profits from foreign trade operations must be considered, as we have already seen, from quite another point of view.

It is the quality of the exported and imported goods that decides the favourable or unfavourable character of exchange operations

The country becomes rich if it exports goods of high productivity and imports goods of small productivity

(104) And inversely. Let us stop on the last word It cannot be said that a country becomes poor if it exports goods of a small productivity and imports goods of a high productivity It does not become poor in an absolute manner, but only relatively.

Let us go more deeply into this.

We have defined the enrichment of a country in such a manner as to destroy all doubt and misunderstanding.

Each country has reached a certain average degree of productivity it has attained to this level through its productive capacity. At this moment the same nation has reached a certain wealth (expressed by a certain number of gold francs per inhabitant); it has attained this level by means of its accumulated wealth.

Those two levels—the average level of productivity and the average level of wealth—completely characterise a country, from the economic point of view, at any moment of its history.

Now if a country increases its wealth in an absolute manner,

it does not, according to our conception, become for this reason richer than it was before

As countries usually increase their population, the augmentation of wealth which is strictly proportional to the augmentation of population, and consequently does not raise the average level of wealth, is not considered a real enrichment

The same thing happens in the increase of productivity.

For a nation, real economic progress consists in the raising of the level of both productivity and wealth

If the level of the productivity rises, and if consumption does not increase in such proportions as to cover all the difference of the newly gained production, there results also an augmentation of the annual savings of a nation, therefore an augmentation of wealth, and a raising of the average level of wealth.

Natural Scope of Protection.

Home Consumption

(105) Examining Ricardo's famous example (see par. 93), we supposed Portugal's cloth production was necessarily limited to home consumption

Indeed, if Portugal wants to export cloth, it enters into competition with England and is soon surpassed

It may therefore be said that the home market is the natural limit for protection

Let us examine the effect of protection (subventions or customs taxes) on the competitive capacity of protected goods.

Let us take the case of goods *A*, the productivity of which at home is inferior to the productivity of the same goods abroad.

Let us suppose that the price of the goods produced at home is 20% greater than the price of the same goods abroad. If this difference persists, competition is impossible even at home, and national manufacture must cease.

Now if, with the assistance of a subvention equal to the difference of the two prices for each unit produced, or with the assistance of a customs tax (the effect is exactly the same in both cases, see note to par. 82) equal to this difference,

equality of prices, or even a slight advantage of price for national goods, is established, the whole home market will be captured by national goods

But national industry cannot go beyond the limits of the home market if the customs tax is as large as to make up the difference between home and foreign prices

(106) When do export possibilities begin?

When a protectionist policy—in a conscious or an unconscious manner—goes beyond the modest aim of satisfying all the necessities of the home market.

There are two ways of bringing this about First by subventions applied to each unit produced, even beyond the home consumption, or by subventions sufficiently high to cover not only the losses resulting from the difference of the prices abroad for the goods sold at home, but also to leave a free margin to cover the losses suffered because of export.

It is quite clear that in this case the higher the subventions are the higher also are the possibilities of export

The second way of supporting exports consists in granting a customs protection, sufficient to cover the difference of price between the home and foreign goods.

Let us suppose that in our example where the difference of price is 20% (the foreign goods costing 100 and the national goods 120) a protection of 30% is granted. That means that the price of the foreign goods in the home market rises to (or may rise to) 130, and that the industrialists (if they combine to this end) may artificially raise the home price to 130, realising a supplementary profit of 10.

This profit constitutes a sufficient fund to allow export abroad at the competition price of 100 By this exportation there is a loss of 20 for each unit exported. We have supposed that the cost of each unit produced remains the same whatever may be the quantity produced. We examined elsewhere (see Appendix III) the more complex case when this cost decreases with the quantity produced. But as there is an artificial profit of 10 on each unit of home consumption, it means that 50% of the quantity consumed at home may be exported without loss.

If the customs tax had been 25, a quarter of the quantity of goods for home consumption might have been exported, and if the tax had been 40, a quantity equal to it might have been exported.

Summing up, it may be said that when protection exceeds the strictly indispensable amount for guaranteeing the dominance of the home market, it permits exportations.[1]

In particular, when the customs tax exceeds the difference between the prices of the home and foreign production, export is permissible

Then industry may sell abroad at a price lower than cost and may be covered by the surplus price from the home market.

(107) The operation seems absurd and immoral: foreign countries to enjoy more favourable prices than the home market! Let us examine this question in the light of our theoretical demonstration

The legitimacy of a 20% customs tax, which was to secure the home market to industry, was the consequence of the particular branch of the national industry being capable (in spite of all its inferiority over against the foreign industry) of a very high productivity compared with the average productivity of the country.

Each unit of goods produced therefore raised the level of the average productivity of the country; the more those goods are produced, the more this level is raised From this standpoint, it is quite indifferent whether the increased market is at home or abroad.

The price of the goods produced is always the same,[2] 120,

[1] CAREY (*op cit*, Vol II, p 278) writes on this subject

"It is claimed that protection raises the price of industrial articles Should this be true, the industrial countries having a system of protection could not export, as one cannot export by going from dearness to cheapness"

From the demonstration we have just made it may easily be seen how far Carey's reasoning is from logic and reality

Protection raises home prices It is only by means of differential prices, as we have shown above, that protectionist countries may export

[2] In point of fact, this price often is much lower, as generally prices in industry decrease with increased production

This is why many writers consider dumping is quite legitimate, since each new unit of goods with which production increases does not imply the same price as the preceding unit.

and it is on the basis of this price that this productivity was considered sufficiently favourable to deserve protection

But it may be said that the country suffers a clear loss, because the national goods are sold abroad under their cost of 120, at 100, therefore with a loss of 20 for each unit.

This objection is quite correct

So long as goods were sold at home and the customs tax was 20, this tax paid by the consumer for the imported goods (if there still *was* importation) was cashed in by the State, and the surplus price of 20 paid for the home goods went into the pocket of the manufacturer. In both cases there was a home transfer everything was being done *en famille*

It is not the same for exports (if the customs tax is 30) It is true, as in the preceding case—the customs tax paid by consumers for the imported goods (if there still *was* importation) goes into the State's coffers, it is quite true, as in the preceding case, that the surplus price of 30, for the goods sold at home, goes into the pocket of the manufacturers, but the third part—that is, the difference of 20 that is the reduction of the cost price for the exported goods—is really lost to the country.

This is a present offered to the foreigner

(108) The question is now to see if there is not some compensation for that present.

If nothing is produced for export, then labour and capital devoted to the production of the exported goods would have to seek other employment.

If the development of the country is in such a state that such labour and capital could be used only in an enterprise of inferior productivity, it is quite possible that what national economy gains by this advance in the scale of productivity, may be far superior to what is lost by the bonus made to the foreigner.

If, in order to make our example practical, we suppose that the productivity corresponding to the exported goods is 2000 francs per workman per year, and if, seeking for other occupation for those workmen and that capital, none is found with a possible and actual productivity larger than

1500 francs, it is quite true that we may consider as net profit for the country's economics the difference of 500 francs (which represents 25% of the value of the goods)

Therefore it may be said that, as a consequence of this export, the production of the country is raised by a value representing 25% of the value of the exported goods.

Now, even if side by side with this positive and concrete gain of 25% of the exported value, there still remains a concrete and positive loss of 20%, the economy of the country still profits

In spite of the evidence of this demonstration, in which we do not intend to neglect the invisible profits, we must confess that in practice the loss suffered by the sale under normal price is a visible and estimable one, while the profit realised by the raising of productivity is more difficult to discern and measure

Indeed, one is not always very sure of being able to indicate exactly the degree of productivity in which to take refuge if required to give up the production of exportable goods; therefore the exact national gain resulting from the augmentation of productivity is not always visible and measurable.

That is why we may consider that the natural aim of protection, an aim which has visible and measurable qualities, is to stabilise national industry until it is capable of satisfying all the necessities of the home market.

As long as we do not go outside the home market, customs taxes and even subventions do not mean positive sacrifices for the country (as in the case of export of protected goods); it is just a displacement of certain sums in the internal trade of the country.

On the contrary, the increase of productivity which is a consequence of protection is a net advantage for national economics.

(109) But there is still another reason which obliges us to restrict ourselves to the home market.

In our system and conception each nation has a natural right to intensify its home production up to a maximum of

productivity; as a consequence, each nation will produce, as much as possible, fine goods of high productivity.

The world's physiognomy would then be greatly changed. There would no more be, as to-day, exclusive industrial supremacies, it would not be possible for any nation to supply more than one foreign market at the same time. Each country would have the opportunity of satisfying, with a large number of fine goods, its home consumption,[1] of course, each nation would have a smaller export possibility for those goods, for the sole reason that it could not be admitted that at the same time all countries should export the same industrial article

Here is a second reason why we consider, all through our book, that the national limit of protection for each country is the satisfaction of the home market.

The Natural Geographical Limit of Protection.

National Territory.

(110) An absurd argument of the free-trade theory is still capable of a certain influence

This question is put: If protection is a benefit in itself, why is it not established in each province, in each district, in each village? [2]

Although it is better not to answer absurd arguments, we shall ask a question just as clever as the one quoted.—If railway stations are so necessary, why is there not one at every mile or every hundred yards?

But we can also answer this question directly, because it presents, if formulated in a reasonable manner, a practical interest. If one asks what is the smallest territory which may profitably be submitted to a system of protection, the problem may be examined from a scientific point of view.

Theoretically, according to all we have stated here, there is no limit, however small it might be, where protection,

[1] Never with *all* (see below, par 145*a*)

[2] HENRY GEORGE (*op cit*, Chap V, p. 51)
"Each country, each county, each city must need a special protectionist tariff"

applied reasonably and according to our principles, may become prejudicial to the political unity making use of it.

(111) Let us take the smallest political unity that exists, Monaco.

If Monaco has a big consumption of playing cards (which is not far from reality) and if the industry of card-making is a superior one, that is, of high productivity, it will be profitable for the principality of Monaco to encourage, by means of subvention or custom taxes, the establishment of a card factory at Monaco, even if this factory bears higher costs of production than the foreign factories which formerly supplied Monaco with these goods

The positive and concrete profit for Monaco is that a number of workmen, who until then were occupied in an inferior occupation and realising only a small productivity, will, in this new factory, have a superior productivity, and so will increase the national revenue as well as the general level of productivity.

There is nothing that can be opposed to this reasoning. The smallness of a State can be no impediment for it to satisfy its reasonable private necessities.

(112) The best proof is that even in such political entities as actual modern States, there have been towns which adopted a protectionist policy for their own account.

What do the grants to new industries, the free sites given for constructing factories, the exemption of taxes and other advantages offered by certain communities mean but protection with a local character?

And everywhere such measures have been systematically applied;[1] the result has been the enrichment of such communities There is an essential difference in the case of Monaco (that is, in the case of small States). ·A town in a

[1] Moreover, a transitory isolation has always been a factor of industrial progress in the world

Napoleon's continental blockade and the blockade of Germany during the late war are well-known examples

Many temporary industrial creations of those periods, believed to be only temporary, definitely remained because they were found profitable and necessary to the peoples who created them

big country shares, because of the fiscal system and for other reasons, all its profits with the whole country. A small State, the size of a town, keeps everything for itself

The levelling process in a State may greatly hinder the advantage of local and regional protection, but still not prevent its existence

In fact, the political entity determines the limit of protection. A political entity, however small, may always profitably apply a certain rational protection

(113) The natural limit of the development of its industry is determined (see par 105 and what follows) by the importance of its internal consumption

Well, in modern industrial technique there are factories which can only produce advantageously if they have a certain productive capacity

Therefore, the least possible production for the existence of an industry determines the least possible market and least admissible territory for constituting the market

According to this point of view, there exists for each industry a minimum territory where it may function under cover of protection

This minimum territory is, for instance, very small for flour-mills, because even a large flour-mill may supply a relatively small population But the minimum territory may be even large for a textile industry, for a cloth or linen factory must have a very diversified production to keep abreast of different tastes and fashions, and this presupposes consumption by a large population [1]

[1] A factory turning out simple and uniform products, where taste does not interfere, may alone supply the total consumption of a certain territory

This is the case of an oil refinery or even of a flour mill

It is otherwise for a factory with products in which different tastes have to be reckoned with

A shoe factory, for instance, can never supply all the necessities of a town or of a country, even if quantitatively it were able to do so There is a practical proportion indicated, between the total consumption of these goods by the population and the output accepted from a single factory

It may be said that out of 100 inhabitants who buy shoes, about thirty could be supplied by a single factory It therefore means that the market of this factory must comprehend a population at least three times as numerous as the one of which the consumption is the equal to the production of this factory.

There are industries which, owing to their form of productions demand an enormous territorial market, even a world market. For instance, factories which manufacture special plant for other factories Those " factories for factories " are often unique for immense territories, such as the United States

Factories for the special machinery used in factories could never limit their production to the territorial market of a single small country.

It is natural that for this kind of factory one could never think of resorting to protection for their establishment in a small country. For, as we have so often said, protection can only reasonably guarantee home consumption

(114) The formation of a protected industry must be in relation to its actual or eventual home market, and nothing else

Export possibilities may arise later, but when all nations have a protectionist system, it will not be easy to go beyond their frontiers in the grounds of their home protection (see par. 106).

However, as soon as an industry can content itself with the home market, protection offers something much more precious than the extent of a world market · it offers a guarantee and a permanence in this market This is a most important point for a capitalist embarking upon a new enterprise

This sense of security offered by protection is inestimable. There are many industries which would give up any benefits obtained through protection in exchange for these coveted things in capitalist competition, security and peace.

(115) Concerning territory, another observation of free-traders deserves notice.

Sumner [1] and Jenks remark that in the United States of America the separate States without protection have managed to reach a remarkable industrial development. This would mean that free-trade gives excellent results

[1] *Op cit*, p. 174

Why not, therefore, generalise for the independent countries of the present day?

The good results obtained in the United States mean nothing The natural conditions of the United States are so favourable that under any system the separate States must have progressed industrially.

But who shall say that under a certain local protection some of these States would not have made greater industrial progress?

Conversely, it is quite true that many of the States made definite and real sacrifices through their incorporation in the larger economic entity of the U S.A.

Fortunately they have found sufficient compensation in the indirect advantages received by their inclusion in this powerful economic organisation.

For internal trade this compensation by amalgamation of interests is both practicable and certain.

The case is other for independent States Their sacrifices for the sake of society have no advantages as compensation, or they are but partially compensated by poor and distant advantages.

(116) After what we have said, it is quite unnecessary to discuss another objection of free-trade, regarding the customs territory. It refers to the fact that all political entities do not coincide with economic entities [1]

It is quite true that most of the actual States are not territorially arranged as rational economic entities, because they are often born of historical accidents which have nothing to do with logical material interests

But could we, as a matter of fact, easily define an economic unit?

Would it not be rather embarrassing to reconstruct the political map of the world according to its economic units?

No. There is no need to change the territorial structure

[1] HENRY GEORGE (*op cit*, Chap V, p 119)
"The manifest absurdity of taking the nation, the country, as unit of protection."

of States in order to justify their right to a maximum of productivity.

It is useless to speculate on intangible realities. Let actual States remain as they are.

Each of them has its own possibilities more or less limited by natural conditions.

Of course, these possibilities could be enlarged, if the map of the world could be changed in a *rational* manner.

But then one would at least be consistent, for within these new units the levelling of interests might be realised, as is not the case with the various " customs unions " in which sacrifices must be made with no hope of return or compensation.

CHAPTER II

THE ECONOMIC TENDENCIES OF THE WORLD

(117) Evaluation of the economic progress of a nation by the volume of its trade has long been an article of dogma.

It was very natural to give such importance and such place to trade as long as the trade of a nation was considered a source of wealth.

The problem as to whether the trade or the production of a nation has the greater importance reduces itself to this question: what is the aim and what are the means?

For the economic life of nations the aim is the satisfaction of all human needs.

This aim is reached by the production and distribution of useful commodities.

If the internal production of a nation is sufficient to satisfy all its needs, foreign trade has no scope Production is always more important than trading, being the indispensable condition for satisfying human needs, foreign trade is secondary, not being in itself indispensable, although becoming at times necessary.

All the economic forces (labour and capital) employed in production represent a direct utility. On the contrary, the economic forces (labour and capital) employed in trade represent a relative utility, in the sense that it is always profitable to avoid international trade and to direct those economic forces, liberated in trade, towards industry and agriculture and so to production.

Therefore any displacement of economic forces (labour and capital) from trade towards production means (whenever it is possible without preventing the distribution of goods for the satisfaction of human needs) a clear profit for society.

Production is therefore an aim in itself; the indefinite extension of production is always a profit for society.

Trade is just a means, and a necessary evil, because the extension of trade is not an advantage in itself, but the contrary. All that could be saved, by turning to production the forces devoted to trade, would be to the advantage of the world

The number of people employed in trade and transport, the mechanical power utilised by transports, and finally the miscellaneous expenses which this trafficking entails are really enormous in comparison to the operations of production.[1]

A few figures will give an idea of the mechanical and human forces employed solely for distribution

(118) In 1896 [2] the total mechanical motive force of the world was estimated at 66,100,000 H P Of this energy 40,420,000 H.P was used by engines and 13,210,000 H P. by shipping, therefore 53,630,000 H P., *i e* 81% or $\frac{4}{5}$ of the total mechanical force was used in transport and merely $\frac{1}{5}$ in the production of goods

It is quite true that in 1926 [3] this proportion is much lower; a very characteristic fact in modern economic evolution. The total mechanical force of the world was then 260,000,000 H P., 110 million was used by engines and 25 million H P. by shipping, therefore 135 millions H.P. or 52% of the total motive force of the world was used by transport.

(119) Commercial operations (distribution) disproportionately raise the cost of goods. Modern statistical analysis abundantly proves this.

For instance, the official statistics of the German Empire [4] dissecting the retail prices of shoes give the following figures :

In a lot of shoes worth 4865 Mks., 2595 Mks., or 54·5%, represents freight and the costs and profits of production (three operations), 467 Mks , say 9–8%, the tax on turnover. 1703 Mks , say 35·7%, for trade charges and profits (six operations).

[1] LAURENT DECHESNE, *Economie mondiale et Protectionnisme* (Liège, 1927, Wykmas), p. 23

" In Flanders a certain amount of flax is retted in Belgium in the river Lys, then sent over to England or Ireland, returned to the country as thread, it is woven here, but the linen goes back to Ireland to be bleached "

[2] WOYTINSKY, *op cit*, Vol IV, p 60 [3] *Ibid*, p 91

[4] *Ibid*, Vol. V, p 149

German statistics show that generally the price of any article to the producer is increased by 10% to 25% in wholesale trade and by 20% to 60% (and quite 100% for shoes and other articles of fashion) in retail trade.

Inquiries made in the United States give the same results.

In 1921 the American Department of Agriculture established that in the price of malt the production costs represent 30·5% and the distribution costs 69·5% of the final value of the product.

Of the 69·5%, about 50% is costs of distribution and 19·5% profits of distribution.

Still in the United States, inquiries have shown that, in the retail prices of oranges, production (total of costs and profits) represents only 40%, whilst retail trade represents 30% The same in the price of clothing, production represents 55%; in the price of shoes it is 64%.

Generally in America trade receives 18–20% of the buying price for coal, groceries, and metals, and 27–30% for furniture, boots and shoes, clothes, drugs.

Looking over these figures, one involuntarily thinks of the wonderful efforts of industry and agriculture to reduce by technical improvements, and by better organisation, their cost of production.

What studies, what science, what sacrifices to reduce by 2% or 3% the cost of production of a merchandise!

And this very merchandise, thrown into trade, is charged with 30%, with 100%, and even up to 200%, of its value for the sole operation of its distribution to consumers [1]

[1] Moreover, the part of trade in the total of national revenue is pretty small, even in countries where trade would seem to be a chief activity of national life

According to Muelhall's tables, mentioned by Woytinsky (Vol I, p 159), for the whole of Europe the total revenue was £7,108 million in 1926, while the revenue from trade was £771 million, therefore merely 11% of the total

In all European countries, as well as in the United States and Canada, revenue from trade represented 10–11% of the national revenue

What was, at the same time, the situation in England, a country preeminently commercial?

Revenue from trade represented £161 million or 11 3% of the total national revenue, which was £1421 million

At the same time, industry provided a net revenue of £438 million, which means almost three times as much as trade

These might really be called the " horrors of trade."

As a matter of fact, the organisation of distribution seems to be the great want of our capitalist civilisation

Upon the surplus value as the blemish in the capitalist system, whole libraries have been written and revolutions have been provoked But no revolt is provoked by that most absurd and wearisome blemish of uncontrolled trade.

Held by tradition, the whole world continues to fall into ecstasies over the benefits of trade, conferring upon it magic virtues.

(120) Nothing is more delicate than to separate, in the infinite complexity of the production and trade phenomenon, those lines of evolution which are clearly economic tendencies.

If we dare to attempt this, it is because in our conclusions we base our assertions not only on acknowledged authorities, but, better still, on incontestable figures

The clearest tendencies perceived in world production and world trade may be summed up in the following propositions :

I. World production is continually increasing, it increases more rapidly than world population.

II. Although progressing, world international trade is not increasing to the same degree as production.

III. Industrial goods represent an increasing proportion of world consumption At the same time, the proportion of goods which may be termed the means of production outweighs that of the production of industrial articles for direct consumption.

IV. Industrial production as a source of national revenue (and as an element of buying power) represents a more and more important proportion in the total production of nations.

V. The price of raw materials (agricultural produce and raw materials) tends to rise; the price of manufactured articles tends to lower.

VI. Industrial countries are the greatest consumers and importers of industrial articles.

VII. The productivity of industry, having in the past

been far superior to agricultural productivity, now tends to approach the latter

VIII Industrial production leads to geographical decentralisation

I

(121) There is no need to-day of any proof that production increases more rapidly than world population

It is a recognised scientific fact that production, measured in real utilities for the whole world, is increasing more rapidly than the population of the globe, and that there is real progress and a real evolution, in the level of the world's standard of life.

This means not only increased consumption of goods per inhabitant, but also the continual growth of the average world productivity, because the net annual production of the world increases more rapidly than the number of producers.

II

(122) It is not easy to show that the increase of world production is more rapid than that of international trade because of the lack of exact data on this point

In fact, nothing is more difficult than to collect statistics on the evolution of production for the whole world.

It is much easier to learn from statistics of foreign trade the total volume of international trade

That is why a complete comparison between the volume of production and the volume of trade is not possible for the whole world, but only for certain important countries—as, for instance, the United States, which has real statistics of its production.

How has the volume of world trade varied?

In 1867–68 the volume of world trade [1] was 44,210 million Mks.

In 1900 it was 90,300 million Mks, and in 1913 it was 169,229 million Mks.

Between 1867–68 and 1900 the increase was almost regular, with about 25% for each ten years. Between 1900

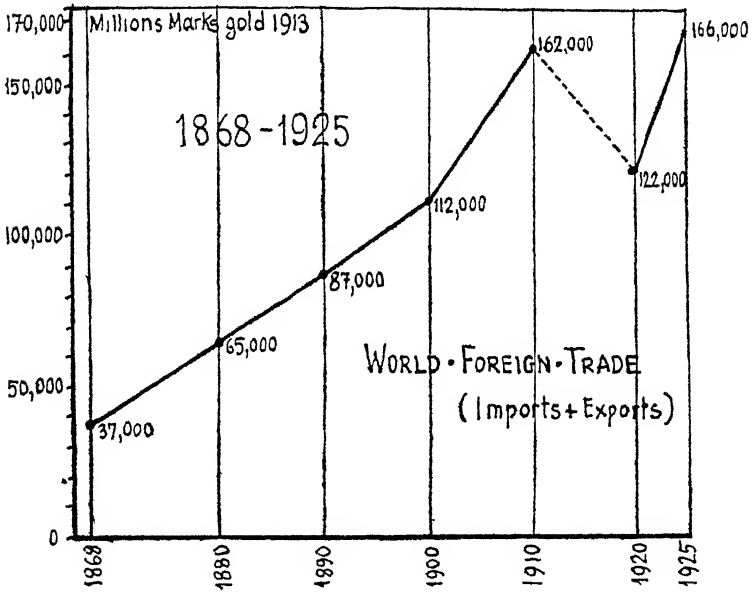
[1] Woytinsky, Vol V

and 1913, in thirteen years, the increase became extraordinary, rising to 88% (the decade 1900–10 alone represents an increase of 62%).

There is therefore, in comparison with the evolution line which became normal in the nineteenth century, a sudden spring throughout the first thirteen years of the twentieth century, up to the Great War

(123) Of course, the war broke this ascending line.

The result is that in 1925 the volume of foreign trade



estimated in "marks of the buying capacity of 1913" was 166,320 million, therefore just a little smaller than in 1913.

This statement might, in a certain sense, be very pessimistic. According to other valuations, notably the one made by the League of Nations in the preliminary work of the International Economic Conference of 1927, there had been an increase of world trade between 1913 and 1925 of 5%.

This increase is exactly proportional to the augmenta-

tion of the population of the globe, which is still 5%, but it is sensibly inferior to the augmentation of production, which for this period is 16 to 18%

From these findings of the League of Nations, we note that, at least from 1913, the trade of the world is no larger in any proportion to production Production increases more rapidly than trade

It is quite true that we might believe this to be an abnormal evolution due to the special consequences of the Great War. At the Geneva Conference much was said about the exaggerated nationalist tendencies of post-war Europe, the isolation created by currency depreciation, and about the multiplication of frontiers

(124) It is none the less correct that the increasing tendency of trade is a "normal" tendency, manifested before the war. We shall prove this by examining the characteristic case of the United States

We shall reproduce, according to King (*op. cit*), the figures of all goods in consumption in the United States per inhabitant (p 48) and of national income per inhabitant (p 129) between the years 1850 and 1910 in dollars of the average buying capacity of 1890 to 1899 (for convenience we shall call these dollars, *dollars of* 1890–99).

We have :

Years	1850	1860.	1870	1880	1890	1900	1910
Consumption goods per inhabitant	72	94	70	145	213	269	284
Income per inhabitant	69	82	79	111	169	232	262

These figures give a very clear idea of the *real* augmentation in the volume of consumption goods and of the volume of production.

Comparing this volume with the volume of foreign trade, we give according to Woytinsky (Vol. V, p. 213) figures of the foreign trade (exports and imports combined) of the United States. Converting these figures into dollars, reduced according to the general index of prices, to *dollars of 1890–99*,

and distributing them per inhabitant, we have the following table :

Years	1860	1870	1880	1890	1900	1910
Total foreign trade in million gold-marks	3 470	4 211	7 730	8 469	12 507	16 927
Index in dollars, 1890–99	141 3	221 6	132 4	113 6	101 7	126 5
Population in millions of inhabitants	31 4	38 5	50 1	62 9	76	92
Foreign trade per inhabitant in dollars, 1890–99	19 8	12 5	29	29 7	40 5	36 5
Ratio between foreign trade per inhabitant and consumption goods per inhabitant	21%	17 8%	20%	14%	14 5%	12 8%

These figures are very eloquent, and give a remarkably clear idea of the relation between production and trade.

The ratio between the volume of foreign trade and the value of goods in consumption, which was about 20% in 1890, continually decreases down to 12·8% in 1910

In other words, in the period 1860–80 about a fifth of the existing consumption goods were employed in foreign trade (as imports or exports), in 1910 just an eighth of these goods were so employed.

(125) It might be objected that the United States are in a privileged situation, which does not allow us to generalise from them for other countries

Thanks to their area, wealth, and natural resources, the United States represent almost the sole case of a country which the more it improves the more it succeeds in becoming self-sufficing.

We might therefore consider the relative slackening in the development of trade in comparison with the development of production as a particular phenomenon for the United States

It is difficult, owing to the want of necessary data, statistically to prove the contrary.

But world evolution, as shown in a series of general observations, permits us to make this conclusion.

III

(126) The consumption of industrial goods has reached a pitch that our ancestors could never have dreamt of.

On the one hand, standards of modern life demand a great many things that were formerly never in use.[1]

On the other hand, industry shows an enormous development, not only in the manufacture of consumption goods, but also in that of machines, plant, and tools which are the means of production.

Industrial goods for direct consumption are manufactured in the same progression as consumption itself; with a larger extension when, through a fall in prices, the number of consumers increases.

Now, if the augmentation of consumption is continuous, presenting each year the same percentage as in the previous year, the augmentation of the production of consumption goods is being developed according to a geometrical progression, having this percentage as ratio

If, for instance, the annual augmentation of articles for direct consumption is regularly 3% over the previous year, the ratio of this progression is 1·03

(127) If throughout some years the augmentation of 3% remains constant, the industry producing the plant necessary for a consumption industry adapts itself to this situation in the following manner:

(*a*) First, industries furnishing industrial apparatus must produce everything necessary for the renewal and the keeping in repair of the existing machinery of the consumption industries, and even of themselves

This renewal—according to what practice shows—is generally made every sixteen years; therefore it demands a new

[1] Hobson (*op cit*, p 5).

" The universal tendency of modern industrial civilisation is to engage a large proportion of industrial energy in the most specialised processes of adaptation of material to the satisfaction of a great variety of special needs This implies the development of a *qualitative* economy of wealth All new increase of wealth will be realised by a reduction of the proportion of raw materials "

stock of machinery representing 6% or 0·06 of the existing stock.

(*b*) Then the machinery industries must produce everything necessary for the increase—as practice has shown, about 3% per year—in the producing capacity of the consumption industries [1]

(*c*) This means that the productive capacity of machinery industries must be adapted to about 9%—namely, 0·09 of the total machinery functioning in all industries

Now so long as the consumption industry rises regularly by 3% per year, the capacity of the machinery industry, which is 0·09 of the total functioning machinery, must also rise regularly by 3% per year.

The ascending curve of the machinery industry is no more rapid than the ascending curve of industry in general.[2]

What happens if the consumption industry in a certain year has a larger increase than the usual one of 3% ?

In this case the rise in production of machinery must be greater and more rapid than the usual increase.

Indeed, it is enough that the increase of consumption goods, *i.e.*, the increase in production of the consumption industry, should be in one year 4%, instead of 3%, for the machinery industry to produce in a year 0·10 instead of 0·09 of the total functioning machinery. This industry must therefore increase its production capacity in the following

[1] (*Probleme der deutschen Handelspolitik*, v F Eulenburg) · "Wenn, wie wir sahen, die Industrialisierung ausserhalb wie innerhalb Europas Fortschritte gemacht hat, *so wird trotzdem die Einfuhr dieser Laender nicht nachlassen, sondern im Gegenteil noch steigen*, nur das sie das Gesicht aendert, indem der Bedarf an gewissen industriellen und besonders auch deutschen Werten steigt Die Art des Bedarfes wird sich notwendig verschieben Die neuen Industrien verlangen gerade Ergaenzung, *verlangen Hilfsmittel und Vorprodukte der eisenverarbeitenden Industrie im weitern Umfange*, die diese neuen Laender nicht selbst wieder zu schaffen vermoegen *Hier ist dann der Punkt erreicht, wo tatsaechlich eine Art internationaler Arbeitsteilung sich von neuem durchzusetzen vermag*"

[2] (*Probleme der deutschen Handelspolitik*, v F Eulenburg): "Das Problem der relativen Kapazitaet, wie man es nennen moechte, hat latent schon vordem bestanden, kuenftig wird es von erhoehter Bedeutung werden. Es erscheint selbstverstaendlich, dass *gerade durch die Ausbildung neuer Industrien fuer diese wiederum neue Beduerfnisse geweckt werden* Vor allem die ganzen Produktionsmittel lassen sich in Uebersee nicht improvisieren ebensowenig die Vor- und Hilfsmaterialen, die notwendig werden In diesen Laendern wird nach der vorhin vorgetragenen 'Theorie der Absatzwege' neue Kaufkraft selbst geschaffen." ·

manner : 0·10 : 0·09 = 1·11, so 11% in addition to the usual increase of 3%, in all 14%.

So when the consumption industry increases its production in the course of a year to 4% (geometrical " ratio " 1·04) the machinery industry, working for it, must increase its production by 14% (geometrical ratio 1·14)

The augmentation of machinery production is more rapid than the augmentation of products for direct consumption.

(128) But there still is something else. The capacity of the machinery industry must, in one year, suddenly increase by 14%. But such an increase is impossible with the existing capacity of this industry.

The branch of machinery industry which produces plant for machinery factories themselves must therefore intensify its labour at such a rate that in one year only new factories must be set up, capable of producing the supplement to make 14%.

The acceleration of the evolution of production is therefore at least still as great as in the preceding case.

That is why all over industrial countries, statistics show a more rapid increase of metallurgical and chemical industries than of textile or leather industries.[1]

In point of fact, textile or leather industries produce goods for direct consumption, while a chemical industry, and especially a metallurgical one, produces goods which form means of production.

The following tables (Tables IA, J, K, L) clearly show the slow progress of the textile industry in comparison to that of the chemical and metallurgical industry.[2]

(129) One fact alone will be sufficient to show this evolution. For two articles of large direct consumption—wool and cotton—the increase in world output [3] between the years 1820 and 1920 has increased 4·5 times for wool and 16 times for cotton.

[1] See also WOYTINSKY, Vol IV, p 15
[2] *Ibid*, pp. 18 and 25
[3] *Ibid*, p. 18.

Over the same period, for two articles of large indirect consumption, special means of production—iron and coal—the increase is 60 for iron and 77 for coal!

TABLE Ia

Great Britain

Numerical Importance of Labour, aged ten years and over, Employed in the Principal Branches of Production

Branches of production	Numerical importance of productive personnel General total in thousands		Percentage of increase in personnel from 1881 to 1921
	1881	1921	
Fisheries	61	65	6 5
Agriculture	1593	1307	18
Mines	437	1305	198
Cement, Glass and Clay industries	130	214	64·5
Chemical industries	52	269	420 5
Construction of machinery and metal works	927	2491	169 5
Textile industries	1191	1293	8 6

TABLE J

France

Labour in Different Branches of Industry

Branches of production	Number of persons employed		Percentage of increase in personnel from 1866 to 1906
	1866	1906	
Mines and quarries	152,326	281,027	85
Foodstuffs	308,451	479,061	55
Chemical industries	48,971	124,644	154
Paper industries	25,136	84,655	235
Book industries	37,717	107,481	185
Textile industries	1,071,834	913,989	— 14 7
Clothing and manufactures in cloth, straw, feathers	761,484	1,593,699	109
Leather industries	285,616	334,203	17
Timber industries	671,219	704,695	5
Metallurgical industries	54,816	69 829	27·5
Ordinary metal goods industries	290,468	758,377	160

(130) Now what place in modern consumption is occupied by industrial products?

Nystron established [1] for the United States in 1924 that retail goods in consumption [2] are distributed in the following proportions:

47·4% clothes, machines, furniture, etc., in short, industrial articles.

44·2% foodstuffs.

8·4% sundry products

The important place of industrial articles is a very modern phenomenon. It could never have been imagined in the simple life of olden times or of the Middle Ages.

TABLE K

GERMANY

Labour in Industrial Production

Branches of production	Number of persons employed		Percentage of increase in personnel from 1882 to 1907
	1882	1907	
Chemical industries	71,777	172,441	140
Lighting industries .	42,705	93,010	118
Textile industries	910,089	1,088,280	19 5
Paper industries	100,156	230,925	130
Leather industries . .	121,532	206,973	71
Foodstuffs industries	743,881	1,239,945	67
Clothing and its cleaning	1,259,791	1,558,848	22
Building enterprise	533,511	1,563,594	196
Polytechnic Institutes	70,006	208,852	198
Various artistic branches .	15,388	30,178	96
Mines, metallurgy and salt-mines	430,134	890,903	107
Stone and clay industries	349,196	770 563	120
Fine metal industries .	459,713	937,020	104
Machines and tool industries	356,089	1,120,282	215
Timber industries . .	469 695	771,059	65

[1] WOYTINSKY, Vol V, p 151

[2] We must note that their total amounts to $35 2 milliard and that the total imports of the United States are merely about 13% of this value

TABLE L

UNITED STATES

Number of Workmen Employed in Different Industries

Branches of production	Number of persons employed (in thousands)		Percentage of increase in personnel from 1885 to 1919
	1880	1919	
Foodstuffs industries	174	685	295
Alcohol and alcoholic beverages	39	55	41
Tobacco	87	157	80
Textile industries	710	1611	126
Leather industries	182	349	92
Timber industries	320	839	162
Chemical industries	45	427	850
Printing and paper industries	119	510	328
Iron and Steel	379	1586	318
Other metals	85	339	300
Naval construction	21	496	2260

In the trade of the United States, an industrial country *par excellence*, the growing position of imports may easily be seen.

Indeed, in the periods 1850–54 and 1900–14,[1] while the export of raw materials decreased in a proportion of 61·90% of the total export to 33·1% of the total export, imports of semi-manufactured goods increased from 4·1% to 16% and of finished articles from 12·9% to 30·7%.

(131) The analysis of international trade made by Woytinsky, Vol. V, p. 197, for the years 1921–25 is even more conclusive

International trade is divided into four large categories of goods:

(i) Foodstuffs, which represent 23–25% of the value of world trade.

(ii) Raw materials, which represent 35–37% of the same value.[2]

[1] WOYTINSKY, Vol V, p 227

[2] 15% of this total are textile materials and 9–10% mineral products

(iii) Manufactured (finished) articles, which represent 30–34%.

(iv) Sundry products, forming the remainder, 4–12%

These figures show that manufactured goods represent a considerable part of international trade

On the other hand, raw materials and manufactured articles together represent 65–71% of world trade

Now, while the 23–25% of international trade taken up by foodstuffs form an incompressible part of international trade (for the circulation of foodstuffs in the world for better distribution to consumers is *inevitable*), the 65–71% taken up by raw and manufactured materials represent the compressible part of world international trade.

The tendency to manufacture raw materials at the place in the very country of their production would considerably reduce the volume of international trade It would stop the export of a part of the raw material (namely, the part necessary for manufacture of finished goods in the country until home demands were completely supplied), and would stop the import of fine products for the same consumption.

Now the compressible part of international trade being to-day almost three-quarters of its value, it means that the tendency to reduce international trade may have very obvious effects

IV

(132) The growing participation of industry in the creation of revenue, consequently of buying capacity, of nations has already been proved (see par 21) We have especially insisted upon the importance of industrial revenue for nations at the head of civilisation [1]

[1] Statistics show very well the decisive influence of industry upon the wealth and revenue of nations

From statistics upon national wealth per inhabitant made by Woytinsky (*Die Welt in Zahlen*, Vol I, p 156) we see that among the richest countries of the world before the Great War there were

(*a*) As industrial-agricultural countries

U S A	. . . .	with £424	per inhabitant
England	.	,, £318	,, ,,
France	.	,, £303	,, ,,

We should like now to draw attention to a tendency observed in all countries—that of the steady increase in importance of industry among all the economic forces

Every day modern life becomes more and more complicated and human needs more differentiated, so that the proportion of industrial articles for current consumption is ever mounting (see par 130)

On the one hand, a maximum of exchange value has been created with a minimum of raw materials by the manufacture of fine and specialised goods.

On the other hand, since the development of industrial activity is limitless, in those countries where agriculture has been developed to the utmost, all increase of national activity is necessarily directed towards industry, and consequently, the proportion of industrial activity, within the national activity, is intensified

Concrete figures show that the industrial revenue of nations increases more rapidly than their total revenue

For instance, in 1812 England had an industrial revenue of [1] £114 million, which was 26·5% of the total revenue of £431 million.

In 1896, England's industrial revenue [2] was £438 million, therefore 31% of the total national revenue of £1421 million.

The relative increase of 26 5% to 31% is not very large, but it must not be forgotten that England was the only

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(*b*) As agricultural countries

Argentina .	with £340	per inhabitant
Australia . . .	,, £318	,, ,,
Canada . .	,, £300	,, ,,

Russia was among the poorest countries with £85 per inhabitant

From the point of view of national revenue the situation is almost the same Among the countries with the largest revenue there were before the war

(*a*) As industrial-agricultural countries

U S A .	with £72	per inhabitant
England .	,, £50	,, ,,
France	,, £38	,, ,,
Germany	,, £30	,, ,,

(*b*) As agricultural countries

Australia	with £50	per inhabitant
Canada	,, £40	,, ,,

Russia and the other Eastern agricultural countries were among the poorest

The question of intensified production is particularly acute for such countries as these

[1] WOYTINSKY, Vol I, p 164 [2] *Ibid*, p 159

country which, at the beginning of the nineteenth century, had any real industrial character

The relative progress of American industry is much more obvious

Between 1850 and 1910 the relative participation of industry in the national revenue increases from 19·6% to 27·6%, while the relative participation of agriculture in the national revenue decreases from 34·6% to 22·4% (the decrease for agriculture and increase for industry were equal about the year 1872 and were each about in the proportion of 24% of the total revenue).

The phenomenon of the relative progress of industry is clearly shown in the U S A , and what is even more remarkable is that American agriculture, for the period we have just examined, had not yet reached its maximum development, and was susceptible of continued extension

V

(133) Under the influence of certain general causes, which we will endeavour to define, prices of industrial articles—formerly much higher than the price of raw materials (agricultural products and raw stuffs)—tend to approach agricultural prices

The evolution of industrial and agricultural prices, for all countries and for long periods, has not yet been studied

It is still to the U S A we must look for examples of scientific precision in this direction

The following table shows us the index numbers for agricultural and industrial prices, based on the period 1890–99, therefore considering the average level of prices in this interval, equal to 100.[1]

Years	1850	1860	1870	1880.	1890	1900	1910
Index numbers for industrial prices	137 8	129 7	191 7	122 9	112 7	100 7	123
Index numbers for agricultural prices	97 5	119 8	204 7	114 9	111 5	100	153·1
Ratio of these indexes . .	1 41	1 08	0 94	1 07	1 01	1	0 81

[1] I WILFORD KING, *op cit*, pp 144 and 150

Therefore between 1850 and 1910 industrial articles passing from the index 137 8–123·9 suffered, in the average level of their prices, a decrease of 10%; for the same interval agricultural articles passing from the index 97·5 to the index 153·1 had an increase of 57%

The result is that the proportion between the industrial and agricultural index, which was 1·41 in 1850, becomes 0·81 in 1910 Industrial and agricultural prices have always been approaching one another

(134) Patten asserted [1] "There is a marked opposition between the rise of the price of manufactured articles and the rise of the price of foodstuffs and of the products of national monopolies."

This observation springs from Patten's central idea that free-trade continually raises prices, forming natural monopolies. It is very easy to understand that the development of raw produce, limited by the natural conditions of its production and the development of industrial products, to some extent illimitable because of the extent of world industrial development, will cause a depreciation of industrial products compared with raw materials [2]

[1] *Op cit*, Chap IV, p 53

[2] As the prices of industrial and agricultural articles continually draw closer, the advantage derived from foreign trade by countries exporting industrial products and importing raw materials is ever decreasing (see also pars 88 and 89)

A good example is furnished by France It is easy to see that the value of each unit of weight imported or exported may give us a very exact idea of the quality (degree of industrialisation) of any goods

Now French statistics give us the following values in gold francs, per two hundred-weight

Years . .	1860	1870	1880	1890	1900	1910
For imports .	23	27	23	20	17	20
For exports	112	94	77	56	48	40
Ratio of both values	5	3·5	3 3	2 8	2 8	2

The quality of imports, expressed in the value of weight units, has varied little, even taking fluctuations of the value of money into consideration

On the contrary, the quality of exports has fallen continuously The

VI

(135) It would seem paradoxical to try to prove that industrial countries are the greatest importers of industrial goods

Nevertheless the facts and figures which prove this assertion must not surprise us.

Indeed, we showed (par 126) that there were two leading causes for the large consumption of industrial articles in the modern world: first, the extension of comfort and the refinement of tastes, which demand an abundant production and a great variety of industrial articles, and second, the rapid multiplication of necessities of other production means constantly created by industry [1]

These two causes apply especially to industrial countries which also have a high social level and an intense need of production means.

This is the reason why industrial countries are important consumers of industrial articles.

(136) Still those countries seem to be largest importers of industrial goods

In 1913 England, for instance, imported industrial goods to the value of £201 million (manufactured), of which £61 million was for metal articles and machines, and £44 million for textile products

The following table shows that industrial countries have the largest imports per inhabitant :

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comparative superiority of exports over imports has therefore always diminished

In 1860, on an average, two hundred-weight for export was worth five times the value of the same weight for import In 1910 it was worth double We do not say that the relative fall in the value of industrial goods is the sole cause of this It would not alone explain such a great fall in the value of exports But we note that a relative depreciation is one of the certain causes of the phenomenon

[1] EULENBURG, *op cit*, p 31: "It is very characteristic that by industrialisation the necessities of a country do not decrease, but increase."

Countries	Total imports per inhabitant (in Marks)	Import of industrial goods per inhabitant (in Marks)
England	343 53	67 40
France	172 25	34
Germany	160 20	21 15
Italy	83 80	19 60
U S A	77 05	18·80
Austria-Hungary	56 4	18 70
Russia	21 56	6 75

It might be objected that this is not conclusive because all sorts of importations are in question

But the table shows both the total imports per inhabitant and the imports of strictly industrial articles per inhabitant, in the principal industrial countries of the world.[1]

It may be seen that the order of classification according to total imports per inhabitant is the same as the order of classification according to imports of industrial articles per inhabitant.

Consequently, countries which import most also import the largest amount of manufactured products

On the other hand, the most industrialised countries are the largest importers of industrial articles.

England surpasses all other countries in this direction

France and Germany come next. The most backward country still seems to be Russia—with a minimum import per inhabitant.

Therefore agricultural countries which, according to certain theories, should be the " natural market " of all industrial articles, have rather a small buying capacity, quite insignificant in comparison with the same capacity in industrial countries

[1] This table is the result of the combination of two tables from pp 202 and 213 of Woytinsky's fifth volume

We may add to the table the latest figures published by M Pierre in the *Journal des Economistes* of July 15, 1928 In 1927 the import of industrial articles per inhabitant, valued in French francs, was

England	831 fr
Belgium	482 ,,
Germany	231 ,,
U S A	192 ,,
France	243 ,,

This is why we are right in maintaining that the future of industrial countries is not endangered through the industrial progress of countries still somewhat backward

On the contrary, by stimulating the industrialisation of those countries, raising their buying capacity and improving their standard of living, there will be created for countries at the highest industrial development a sure basis of prosperity and constant progress

VII

(137) The respective productivity of industry and agriculture has been fully dealt with in another part of the present work (see par 21, etc.).

We would notice here the variations of industrial and agricultural productivity

This research, as others, can only be made for the United States, the sole country with scientific statistics on productivity (see par 25)

We give below an admirable table composed from the data of Wilford King (*op. cit*), representing productivity (net average production per workman) in dollars of 1890–99.

Years	1850	1860	1870	1880	1890	1900	1910
Industrial productivity	329	471	408	537	757	891	849
Agricultural productivity .	326	273	146	167	237	355	392
Their Proportion	1	1 73	2 80	3 21	3 20	2 55	2 10

These figures may be graphically represented by the diagram opposite

This justifies the most eulogistic comments, since never before and nowhere else in American statistics has there been a series of figures giving such a synthetic representation of the evolution of the two great branches of human activity : industry and agriculture

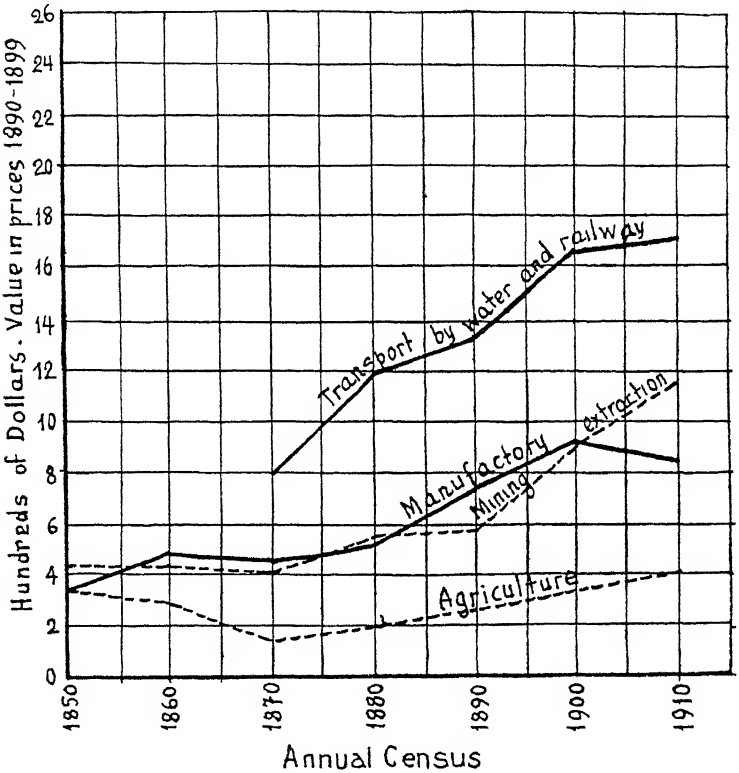
Industrial productivity rose throughout the sixty years considered by 3·90 (from 329 to 849 dollars of 1890–99).

Agricultural productivity, made far less progress and was subject to very irregular variations.

Only since 1880 is the rise regular and even very rapid, rising in the interval of thirty years 2 35 (from 167 to 392 dollars of 1890–99)

For this interval industrial productivity rose more slowly, merely 1·58 (from 537 to 849 dollars of 1890–99)

Thus, since 1880 there is a constant tendency of approach



between industrial productivity, which increases more slowly, and agricultural productivity, which increases more rapidly.[1]

[1] "The rise of demand must be followed by an increase of productivity over the same superficies, prices of wheat and of meat rise, and so we come back to the normal growth of prices which had been irregular for twenty-five years, thanks to quite exceptional conditions That is to say, agrarian prices outstrip industrial prices for centuries, and, after all is said and done, obey the law of decreasing output of the soil, other conditions being the same, the production of a given surface can only be raised by utilising, for the same output, a labour and capital proportionately higher" (Dr Hermes, Geneva Conference, 1927)

The result of this levelling is that the superiority of industry over agriculture, which in 1860 was 3·21 times greater, has in 1910 fallen to only 2–16 times greater.

Modern economic evolution is therefore characterised by a slower progress of industrial productivity, a faster progress of agricultural productivity, and a tendency of approach of these two productivities [1]

This levelling phenomenon is the most marked fact of the contemporary era, and will, we venture to say, be also that of the future

VIII

(138) The tendency to geographical decentralisation of the production industry is perhaps the best known and the most acknowledged of modern tendencies [2]

"The decline of Europe" has been much commented upon since the war

The causes of intensified industrialisation have been examined [3] by us elsewhere (see chapter on theory of protection).

Apart from all social and political reasons, the economic reason, or strictly economic advantage, is sufficient to justify this tendency.[4]

Moreover, any strictly geographical fact which favours industrial decentralisation is of always greater and greater relative importance Waterfalls, for instance, may be the motive for new industries.[5]

[1] It is interesting to note that in 1850–80 this tendency was exactly the contrary—that is, agricultural productivity was falling instead of rising During this whole interval the relative superiority of industry increased

[2] CAREY (*op cit.*, p 39)

"With each new development of the forces of nature, the local attraction increases and the central attraction diminishes"

[3] It would be very interesting to prove that superior industries with high productivity may arise anywhere

Superior industries have no "native land" Think of Switzerland!

[4] "This new distribution of the producing activity of the world is not only a consequence of the war It is rather the continuation of a tendency already manifested twenty or thirty years ago" (Layton, Geneva Conference, 1927)

[5] F. RUSSO, *op cit*, p 221

"So the supremacy of coal and iron is slowly declining and a new supremacy is appearing, a supremacy which may change the basis of industrial hegemony."

According to their natural hydraulic power, continents may be classified as follows:

Africa, Asia, North America, South America and Europe.

Europe is thus, from this point of view, the poorest of all the continents Now the utilisation of this energy has hardly begun (there are only 29 million H P used in comparison with 439 million H P. available); when there is a more intense utilisation, Europe will lose more and more of its importance.

CHAPTER III

ECONOMIC REALITIES AND THE POLICY OF GENEVA

(139) Now that we have come almost to the end of our work, we believe we have sufficiently prepared the ground for discussing the economic policy of the League of Nations

In reconstructing the theory of foreign trade, we have shown the profound interest there is for each nation to direct its industrial production policy towards the complete satisfaction of its home market

But, while studying the economic realities and portents of the world, we discovered a tendency in industrial countries to increase their import of industrial goods

We have therefore the necessary scientific and historical basis for examining the problem of the proper co-ordination of production in the various countries of the world Has this problem a solution, and in which direction may it be found?

(140) But first, what is the Geneva policy?

From all we have said so far, the question which interests us among all those that were "settled" by the Geneva Conference of 1927 is international trade policy, and especially the question of customs tariffs

This was [1] the central and essential problem of the Geneva programme and yet remains the problem in which the least progress towards solution was made.

(141) The interest of the Geneva inquiries lies in the important and absolutely new aspect for society, that there now exists a supreme instance in which the economic ideas of the world were to some extent "officialised"

[1] As M. Theunis, the president of the Conference, recognised in his final speech.

Under this guise economic opinion assumes an authority it never had before

The Geneva instance is not, at the present time, decisive for economic problems, but, awaiting the moment when it might become so, its noble ambition is to appear before the world as the supreme *scientific* attempt

It is therefore on the scientific principles professed by the Geneva Conference that our attention must be directed [1]

Now what are these principles? First and foremost, all the Geneva ideas are towards universal free-trade

It is true that, though the International Conference of 1927 declared itself against the protectionist system, it did not try to take up a dogmatic position on free-trade

It is also true that in his closing speech, the president, M. Theunis, stated that the aim of all their efforts had been to assure "liberty of trade" and a better exchange, but not "free-trade"

Nevertheless the principles of the Conference were all based upon the classic doctrine of free-trade, and all the ideas of the Conference flowed into the general channel of free-trade [2]

If the conclusions were not openly in favour of free-trade, although many members of the Conference were very categorical on this question,[3] it was only due to the spirit of compromise that must always reign at the League of Nations.

Moreover, all interpretations of the League's tendency agree with our assertion [4]

[1] CASSEL, speech at the Conference "All economic measures and all economic policy are, when all is said and done, determined *by popular ideas* upon the economic ends and relations

"Wrong ideas may, and certainly do have, in the present case the most pernicious influence upon effective economic development, and it is obviously necessary, in the first instance, to be exactly aware to what wrong ideas this lamentable state of things is due"

[2] Here, for instance, is a classic opinion "Too often one fails to see that attempts to stimulate artificially industries which otherwise would not flourish in a certain country, hinder just those activities most proper to the country in question" (Serruys, France)

[3] "Let us, as much as possible, suppress all economic barriers and let us establish commercial conditions equal for all nations seeking peace and promising to maintain it" (Da Cuhna Leal, Portugal)

[4] ELEMER HANTOS, *Die Weltwirtschaft Konferenz* (p. 104) "A new era is beginning, a regeneration of the free-trade spirit will follow, and public opinion will disown protection"

There were but few representatives with the courage to declare openly for the maintenance of protection in their country [1]

(142) The principal object of all discussions at Geneva was the decline of international trade after the war [2]

It is the disaccord between the development of production and the development of trade that arouses the greatest anxiety [3]

Further, the decrease of the purchasing capacity of certain countries is the principal cause of the economic crisis of the world

To create buying capacity is the chief problem. Anything which increases the buying capacity of the world is progress, and anything which decreases it is regress

But to reach this end one must know how to set about it.[4]

(143) This is why the great controversy: free-trade or protection? is better stated in these terms Is it protection or free-trade that best develops buying capacity?

[1] Sir David Gordon (Australia). "He declares that the Australian tariff is decidedly protectionist Australia, a young country, must favour the creation of industries, it must also provide fiscal revenue Measures which may be good for Europe cannot be so for young countries, these must choose their own line of conduct"

[2] According to *The Economic Forces of the World* (a volume published by the Dresdner Bank), world production in 1925 was 18% larger than in 1923, while international trade was only 5% larger For Europe, production was 5% larger and foreign trade was 11% smaller

Moreover in 1913, of the international trade in Europe 64 to 66% was inter-European trade

Europe's most important customer is still Europe!

It is worth noting that Europe's second customer is America, with 18% of European exports in 1913, while all the other continents together accounted for just 16%

Once again the law that only rich countries and continents count both as regards production and imports is verified, and that production and import vary in the same sense and are never in opposition

[3] Theunis. "The crux of the actual difficulties seems to consist in the fact that trade has not been able to follow, especially in Europe, the development of means of production which have reached and even exceeded the pre-war level"

[4] Belloni, p 142 "But I consider that setting the problem of the augmentation of the buying capacity as one of the necessary means for solving the economic crisis, is using that which may be the result of a system as one of the proper means of its realisation In fact, it is only by establishing a better world equilibrium and a more rational distribution of raw materials, population and labour, that we could raise the buying capacity of the people"

Free-traders assert that the buying capacity of nations always decreases under a protectionist regime.

They believe that the buying capacity of a nation is determined by the annual revenue of that nation. Therefore, if by protection the national revenue of a certain category (protected industries) is increased, it is reduced to a larger extent in another category (in other industries)

All our demonstrations have proved the contrary. National revenue is not a fixed thing The displacement of productive forces (capital and labour) from one branch of production to another is followed by an increase or a decrease of national revenue, according to the displacement (see par. 78). In particular, the displacement caused by a rational protection, in the sense of the most productive activity, is followed by an increase of national revenue, therefore by an increased buying capacity

Especially for the agricultural countries of Europe and Asia an increase of buying capacity cannot take place by any other means [1]

[1] In the course of this work we ought to have distinguished between agricultural countries with a dense population, where the income per inhabitant or per producer is very small, and new agricultural countries with a sparse population, where the income per inhabitant is very large

In the first category we must place Russia, Roumania, Yugoslavia and the Balkans, as European countries, India and China as Asiatic countries.

In the second category we may place Argentina, Brazil, Canada, Australia and New Zealand

Our conclusions as to agricultural countries apply especially to those of the first category

It is in these countries that the contrast between industrial productivity and agricultural productivity is more marked, and in which the latter productivity is smaller

On the contrary, in countries such as the Argentine, the level of productivity is much higher than in other agricultural countries, and may sometimes exceed industrial productivity

We have no available statistics, but the case of the United States is very edifying in this respect There, agricultural productivity is very large, and the contrast with industry is much smaller than in other countries (see par 24)

The figures of exports per inhabitant may give us an approximate idea of the productivity of agriculture in these countries We quote from R Pierre (*Le journal des Economistes*, July 15, 1928) the following figures representing exports per inhabitant in 1927, in French francs .

New Zealand	4004
Canada	3241
Holland (colonies)	2588
Australia	2758
Argentine	2358

It is by industrialisation that a country increases the ratio between its production and the economic forces devoted to this end, that is to say, average productivity or the so-called "*economic coefficient.*" [1]

To maintain by free-trade agricultural countries in their actual state, means to keep them for ever in the position of poor customers of big industrial countries [2]

Free-trade maintains heavy labour in backward countries; protection encourages dignified labour (*see also* Hecht, *op cit*).

And it is only such superior labour that creates a powerful buying capacity

(144) Backward agricultural countries are faced with the following dilemma:

If they produce industrial articles, they produce them under unfavourable conditions as compared with abroad, therefore at greater cost, if they do not produce them, they cannot import them, as they have nothing to pay with

In the first case, large industrial countries profit somewhat because the general rise of buying capacity in agricultural countries and the development of their demands bring about an increased import of foreign industrial goods.

The figures greatly exceed the figures of the big exporting industrial countries, which are

England	1973
France	1353
U S A	1028
Germany	974

[1] EULENBURG, *Probleme der deutschen Handelspolitik*, p 292 "Starkung des inneren Marktes Kann also nur heissen Hebung der realen Kaufkraft durch Mehrerzeugung bezw Kostenminderung *Dies geschieht durch Erhohung der Produktivkraft* und des nationalen guter vorrates, d. i dadurch, dass sich das *Verhältniss von gesamtaufwand zur nationalen Produktion, also das, was man den oekonomischen Koeffizienten nennt*, verbessert"

[2] M SERRUYS (France) (at the Geneva Conference) "In a country with an agrarian population the demand for industrial products cannot be great, because, national revenue and profits being small, buying capacity is, in consequence, also small"

GLIWIK (Poland) (at the Geneva Conference) "It has been proved that most of the countries of continental Europe have a mixed economic structure, and that to consign these countries to the rank of strictly agricultural countries would be against the interests of highly industrialised countries Statistics show that the most important market for industry is in industrial, and not in agricultural countries"

In the second case, large industrial countries have no profit! And yet it seems that the second case is preferred.

If India or China remain in their actual economic condition, it means that the large industrial countries will continue indefinitely to sell them the same insignificant quantity of goods as at present

(145) Hobson [1] has a very interesting explanation about unemployment in countries like England. According to him, unemployment is caused by the unequal distribution of wealth. There are too many rich people who save, instead of consuming.

For people with an average or a small income, the part of this income which is consumed is larger and the part saved is smaller than that of rich people

Now savings increase the means of production, and so production itself, and thus accentuate the disproportion between production and consumption.

Therefore only a distribution of wealth on a different level could re-establish the equilibrium between savings (in consequence the means of production, and production itself) and consumption.

But such a redistribution would be impossible without a social upheaval.

"*Mutatis mutandis*," this explanation of Hobson's, valid for individuals, is also valid for the nations of the world.

As a matter of fact there are in the world countries that are too rich, which allocate too large a part of their revenue for national savings, investing it in new enterprises which raise production.

Besides these countries, there are poor countries unable to raise their purchasing power at the same rate as rich countries can raise their producing capacity.

The solution is not the impoverishment of the rich, but the enrichment of the poor. A better distribution of the instruments of production must take place Patten (Chapter IV, p. 36) "For us foreign trade is the effect, not the cause, of national prosperity. So, in favouring

[1] *International Trade*, London, 1904, Methuen

the growth of this prosperity, protection develops foreign trade "

Newly created capital in rich and industrial countries must not remain there in order to augment a production apparatus already far too developed, but must migrate into poorer countries and assist their industrialisation

Thanks to this method, poor countries will increase their production and their buying capacity for goods produced by large industrial countries, and a better equilibrium between production and consumption will be realised throughout the world [1]

This better equilibrium of the world, characterised by a rise in purchasing power in countries which to-day are poor buyers, and by useful work for free capital and labour of industrial countries, can be obtained in spite of everything, through the progressive industrialisation of backward countries ! [2] .

(145*a*) The idea of industrialising backward countries has nothing to do with the idea of autarchy or the idea of generalised protection.

At Geneva autarchy was much spoken of. The idea of autarchy in modern life cannot be sustained except by one argument—war. Further, for autarchy to be indispensable, a country at war must be quite isolated from the rest of the world and from its Allies !

Industrialisation as we conceive it is just the opposite of autarchy. Each country applies itself to the most productive activity, without concerning itself as to how it will be able to satisfy all its needs. The aim is to raise the level of the productivity of the country. As for its supply of the necessities of life, this is done either by interior production or by importation with no preference on either score.

[1] The augmentation of buying capacity will be much more certain in countries with small or average revenues, where an important part of the national revenue, augmented by industrialisation, will go to direct consumption

[2] These countries, imitating in consequence of industrialisation, the social life and the comfort of large countries, may be expected to import large quantities of the products of those countries

The degree of its productivity will alone decide whether an article is to be produced at home or imported

The character of the article and whether it is indispensable to complete production are of no importance.

It may be well seen that, in our view, autarchy is not an aim, nor is it a consequence.

The tendency to concentrate upon certain activities of large productivity leads rather to specialised systems of production, often insufficient for the integral needs of a country.

Realisation of this tendency creates and maintains an interdependence between all nations.

If, for instance, each country manages to produce for its own consumption certain industrial articles, then for these articles it becomes independent of other countries, but for all other articles which it does not produce, because of their small productivity, it remains dependent upon other countries.

Therefore our conception leads towards interdependence and not towards autarchy.

(146) With regard to general protection applied to all branches of national production, the protection so much talked of in Germany at the end of last century, we think it superfluous to say that we do not agree with this system.

In effect, under a regime of general protection each branch of production has its own protection whatever may be its character.[1]

In the system that we recommend it is quite the contrary. Protection must not be applied except to certain products,

[1] It has even been sustained that (Sumner, *op cit*, pp 59 and 86) in such a system, each producer being also a consumer, the advantages obtained are compensated by the sacrifices made

This observation is quite true But the compensation is never exact, and a scientific system of protection might be imagined, in which, taking into consideration the effects of a customs tax for each raw material and for each consumer for a certain industry, the customs tax for the finished article of the same branch of industry might be fixed at such a level as to represent a real advantage for the producer

This is the progressive line of customs taxes for all goods, from raw materials to the finest industrial goods

We shall not discuss this possibility in connection with our conceptions, as we have never recommended general protection

generally of a smaller number than the total of productions of a country.

It may also happen that under such a system a protected industry uses protected raw material, and so the phenomenon of compensation is produced (see footnote (1) p 211) But this case has quite a special character

The system itself is opposed to the system of generalised protection Only articles with large productivity (productivity which exceeds the average productivity of the country) are protected, all others are not.

An exaggerated and illogical extension of protection is not advocated, on the contrary, it is opposed.

(147) Free-trade, in recommending the specialising of each country in the articles in which it presents the greatest superiority in comparison with other countries—thus, just those products favoured by nature—seems to believe in a natural harmony of the interests of all countries

This natural harmony appeared simple and automatic. It was to function of itself with no interference of men or of State politics.

There is much to be said—and much has been said—about the non-existence and impossibility of this automatism, but we need not discuss this problem, as we do not admit its premisses

In fact, we have shown that the aim of every nation cannot be to confine itself to activities which present a superiority over foreign countries (relative external superiority), but, on the contrary, should be to concentrate their activities upon a maximum absolute productivity [1]

Now, while the branches of production representing for each country the largest national advantages differ for each country, the branches of production presenting a maximum

[1] PATTEN (*op cit*, Chap IX, p 125) "Nations have prospered because they have first and foremost looked for absolute profits, and England is no exception to the rule England has a relative advantage in working its coal-measures, Spain and Sweden have an advantage in working their iron ores But has England ever maintained that it should close its iron mines in order to acquire the *relative* advantage it could, by exchanging its coal for the iron ores of other nations?"

absolute productivity are practically the same for all countries

Here is the great difference between the conclusions of the old theory of international trade and the conclusions of our new theory

According to the classical conception, the law of the world was natural harmony, according to our theory, an economic fatality begets antagonism towards certain privileged domains of production

The economic harmony of the world is no longer a certain consequence, it may or may not be produced, and we need not concern ourselves with it This harmony should be artificially realised by placing upon a new basis the principle of international solidarity.

(148) The road to the economic co-operation of the world is long and complicated But if we were sure that it leads to our ends, it would be advisable to follow it

The other road, the automatic realisation of harmony, has never led to any end, it has had to be recognised as too chimerical.

For the theory on which this idea was founded was wrong We proved its wrong construction, we shall also recognise its consequences.

If by international division of labour between nations,[1] such as the classical theory conceived it, every country could obtain the highest satisfaction of its own demands, would it not be absurd to see these countries conforming to this law and pursuing the aim of producing superior goods?

According to this theory, the problem of international co-operation does not exist

According to us, it does exist, and is really very important. To speak the truth, it is unsolvable

We are therefore not pessimists, but optimists But it is a short-term optimism

Co-operation and harmony seem possible, but not without

[1] "Moreover, the true sense of international division of labour is not the sense of the division of labour in a workshop! We mean a specialisation not division" (that is *Zerschlagung*, not *Arbeitsteilung*) Levy (*op cit*, p 39).

difficulty, and especially not without respect for the actual inequalities of the world

Generally it seems that the League of Nations is lacking in the spirit of evolution All its conceptions are static, its equilibrium is a *status quo*.

For instance, the League, in the economic domain, ignores the expansion of prolific peoples, and so the problem of emigration.

Similarly in the purely political domain, the League was unable to answer the outstanding question: How will the League be able to realise by peaceful means the new *inevitable* equilibrium when, owing to variations in their population, the actual proportion of the power of States will change?

It must never be forgotten that the persistence of the idea of war is chiefly due to the fact that war is the sole juridical instrument which allows of new adaptations to the new situations created by the evolution of countries The idea of war is unhappily involved in the idea of this evolution.

After a longer evolution, when all the countries of the world will have taken real steps towards industrialisation, and after a certain levelling between industrial productivity and the productivity of raw materials will have taken place, there will be a reconciliation between the efforts and the successes of humanity [1]

Then the economic co-operation of the world will no more be an empty word covering mutual exploitation, but a reality in which everyone may find satisfaction [2]

(149) But before going so far, and confining ourselves to the present, we would ask:

[1] LAYTON, *Geneva Conference*, 1927, p 111

"I do not mean to say that this transformation (the industrialisation of backward countries) will at the beginning be prejudicial to established industries, and will necessarily imply the impoverishment of Europe

"On the contrary, an important rise in the productivity of distant nations (which will have in consequence to raise their standard of life, especially in poor countries with a dense population) is, to my mind, capable of raising considerably the volume of international trade, in which Europe will have its part"

[2] HECHT (*op cit* p 292)

"If there is reason to interdict labour below a certain price, menacing the worker by misery or by force, it cannot be right to ignore these conditions, when buying the products of such labour, that is to say, merchandise."

Must we consider industrial decentralisation and industrial advancement of new countries a regrettable phenomenon made to trouble the excellent equilibrium of humanity? Does this phenomenon endanger the lot of older industrial countries? We strongly believe that it does not.

At the International Geneva Conference, Mr. Cassel stated that the economic world crisis is largely due to the fact that industrial goods have become too dear and that agrarian countries are not capable of paying these prices [1]

On the other hand, agricultural countries cannot develop because they are incapable of improving their production by the import of agricultural machines, fertilisers, etc.

This statement is true, but we cannot admit Mr. Cassel's remedy—that is, free-trade.

Through free-trade, the actual situation is simply consolidated and prolonged For under this system agricultural countries are to remain strictly agricultural and are always to have a small purchasing power It is their industrialisation which alone can increase their buying

[1] Mr Cassel believes that the tendency of industrial products is towards a relative rise of prices, in comparison with other products, but we have shown quite the reverse

This difference is due to the fact that Mr Cassel examines only the post-war period He is quite right for this period, but he is not right for the longer period that characterises modern economic evolution (see par. 133)

For the post-war period, Mr Cassel shows very clearly the progressive increase of dearness, the more we advance in the different processes of manufacture and the more we approach the consumer

He gives, as a conclusive example, index numbers for leather articles, which are

87 for hides, 107 for undressed leather, 157 for shoes

This is what forms " the general fluctuation of prices " The cause of this fluctuation is the monopolising tendency of the Trusts and trade unions of different countries

" It is easy to see the fatal influence that monopoly systems have had in the evolution of the lamentable situation " If this is the principal cause of this relative dearness, is it natural to support any longer the monopoly that large industrial countries still possess?

Only by breaking up these monopolies, by industrial decentralisation and by protection, will fluctuations be abolished

Finally, Mr Cassel shows us that it is industries which produce capital (iron and machines) which suffered the most by this post-war crisis

The effect must always be the same the necessity for decentralisation of industry

This alone will raise the purchasing power of the world for goods which are industrial investments (see also par 127, etc)

capacity and create a market for the older industrial countries.[1]

(150) Why, for instance, does English industry suffer to-day from chronic unemployment? Is it because the eastern countries of Europe have begun to produce more industrial goods?

No. The real cause is, that, as a consequence of the war, those countries have become poor, and therefore their buying capacity has greatly decreased

If the eastern countries of Europe had progressed normally, in a period of uninterrupted peace, they would have been able to create industries for themselves, increasing their purchasing power at the same time, so becoming important buyers of the industrial products of the great nations. The balance would have remained stable, and no crisis would have existed for the great industrial countries.

The crisis of important industrial nations is therefore not originated by the normal industrialisation of backward countries

It is the sudden impoverishment, caused by the war, that has caused a consumption crisis.

M. Gliwik (Poland's delegate at the International Conference) was quite right in asserting:

"It would by no means be advantageous for large industrial countries, for countries newly industrialised, to return to the rank of agricultural countries."

Moreover, Carey (Vol. I, preface, p. xx) writes:

"A real agriculture always follows, and never precedes the establishment of a diversified industry; consequently protection is not an industrial, but an agricultural question."

Mr Hermes, the German delegate at this Conference, also insisted upon this point, that the purchasing power of the world depends entirely upon the purchasing power of agricultural countries.

[1] (See pars 135–136); Hobson, *op cit*, p 174
"All increase in the capacity of production of Germany and the United States is a source of new wealth for England, exactly in the proportion in which the increasing volume of our trade with these countries obliges them to hand over to us through the regular process of exchange an increasing quantity of their national wealth"

(151) The radical remedy for the actual economic state of the world must be looked for precisely in this direction.[1]

Our solution we propose for this permanent problem is a radical one. For the feeble purchasing power of agrarian countries is a permanent fact.

The conclusions of the preamble of the Geneva Conference are quite different. If agriculture sells goods cheaply and cannot buy the now more expensive industrial products, this is because the power of consumption of the industrial classes has decreased, owing to unemployment.

Consequently, the first cause should be sought in the consumption crisis of the industrial classes, and not in the consumption crisis of agricultural classes. This is to reverse the question.

But even if unemployment causes a real decrease of purchasing power in industrial countries and among the industrial classes, this is merely temporary. As a rule, the consumption level of industrial countries is much higher than that of agrarian countries

There is a permanent lack of equilibrium, and here is the point which requires a radical and certain solution.

Otherwise, to pay too much attention to temporary events and to explain unemployment as a consequence of diminished consumption by industrial countries caused by unemployment does not get us anywhere.

Nobody could contest the solidarity of all the countries of the world

The Conference was right when in its preamble it asserted .

" The public opinion of the world begins to understand that the welfare of the world cannot be shut up in a box."

But solidarity is not a simple thing The mechanism of industrial solidarity is extremely complex, and those who do not understand it may bring more trouble upon it than blessings

[1] M Sokolnikoff (*Geneva Conference*, p 126) " The agricultural workmen and peasant masses who direct the policy of the U S S R have expressed their firm intention of liquidating, as soon as possible, the agrarian character of the Union's structure, as also the out-of-date industries which are a heavy inheritance from the pre-revolution period "

(152) The Geneva Conference was throughout dominated by this idea. Free-trade is peace [1] Nothing, neither logic nor history, justifies this idea

Nobody, up to the present, has shown any coincidence between protection and political aggressiveness.

(153) Nor does protection oppose the principle of universal solidarity At most, protection opposes monopolies and exploitation.

The protection we have examined, and which we justify only under particular conditions, will never hinder [2] by prohibitions the free circulation of raw materials, it simply intends to secure the home market for certain industrial products.

Protection favours therefore the use of certain raw materials where produced, so facilitating a decentralisation of the world's superior industries

By this decentralisation international solidarity is brought about. It does not mean that poor and backward nations must renounce the immediate and certain profits of industrialisation and continue to offer to large industrial countries the pious opportunity of supplying their weak markets with industrial products.

On the contrary, industrialisation of these poor countries is the only way for them to retrieve themselves, and the only real basis upon which large industrial countries may prosper

Real solidarity does not mean to let rich countries live on the poverty of poor countries, but the enrichment of poor countries and incidentally also of rich ones.

(154) In this sense there is a marked specialisation in world industries.

Industries which produce articles of direct consumption are becoming more and more decentralised and are springing up in all countries.

[1] This does not even mean internal peace Let us hear what Karl Marx says: "A free-trade system works for destruction It causes great antagonism between the proletariat and the bourgeoisie I favour free-trade only in the revolutionary sense"

[2] We must repeat that we do not admit a protection of any kind applied in any manner!!!

Industries which supply the means and implements of production (capital also) are confined to certain great countries

This is a logical specialisation, because it is the necessary consequence of industries producing implements of production to possess an almost universal market.

(155) The great principle of free-trade is the division of international labour.

According to this principle, complete freedom of trade is followed by two consequences :

(*a*) The total production of the world is increased

(*b*) The production of each country is increased.

The second proposition is far more audacious than the first.

We must confess that we have found nothing to prove it.

If it could be proved, there would be no more need of the discussion between free-trade and protection, no doubt, the case would be won for free-trade.

It remains therefore for free-trade to prove at any rate the first statement, that freedom of trade is followed by a maximum production for the whole world [1]

Let us suppose that this were true, we are here in the presence of a truth of vast importance

It would then be very difficult for any nation to invoke a selfish interest which might conflict with the general interest of humanity.

(156) Let us suppose that the free-trade doctrine is true for the first point, but not for the second.[2]

[1] It must not be forgotten that the eventual *optima forme* can only be realised with the aid of transport In these comparisons the immense expenditure of energy and labour which international transports demand must never be neglected

Free-trade ideology drives humanity towards transport Conversely, the ideology of protection may create a frenzy of production !

[2] This supposition is, moreover, gratuitous, since we have shown that, for backward countries, protection involves positive displacements in productive activities, resulting in a growth of their production, while at the same time not necessarily involving for large industrial countries any *negative* displacements resulting in a diminished production

Consequently, for the world, the result of protection as a whole is not a recoil, but, on the contrary, brings us nearer to a complete solution It follows that the opposite of protection, free-trade, instead of representing a complete solution for the whole world, is much farther from this than protection is

The free-trade system, therefore, is to represent the highest formula for humanity, but is not to be the best formula for each particular country

Then the average production per inhabitant would be the greatest possible for the whole of humanity, but there will still be countries for which the average production might be greater under protection than under free-trade

It therefore means that, giving up protection, those countries will give up a national positive advantage for the sake of humanity, which means a direct and concrete sacrifice

Therefore, from this point of view, national aims do not coincide, at least for certain nations, with the aim of humanity at large.

(157) Here a question arises Can we impose upon a nation the renunciation of its own aims to follow those of humanity?

Is the principle of the economic forces of humanity (the principle of highest output) to be set above the principle of the liberty of nations? The problem ceases here to be economic, it becomes philosophical

To get an answer, let us see what happens to the citizens of the same country.

It is very certain that the best distribution of individual energies is not obtained under a system of complete individual liberty.

Men are not born with equal endowments for their future social functions

If the distribution of the economic, political and social parts of a nation were made according to plan by a tyrant, no doubt we might reach the best utilisation of human intellectual energies.

But at what price?

Each would lose the liberty of choosing his own career, the liberty of decision. His function in life would be allotted by an outside force The limit within which he might educate himself and prepare for his career would be determined beforehand.

Everyone would be told how far he might proceed with his education, since, from the point of view of maximum output, it would not be useful, but useless for any individual to go further than had been prescribed for him

For the sake of the best division of labour can we retain a man against his will at work which he considers inferior, or that he dislikes and will not do?

In the name of what economic or even ethical principle may a man be prevented from developing his forces (or the forces he thinks he has)? [1]

In the name of what principle may we forbid to a nation (free-trade does forbid it) to realise for itself a limitless prosperity, even if this prosperity should divert the whole world from the highest level of production it could attain?

Democracy presupposes, and demands also, respect of the individual in the pursuit of his own aims; could we forbid nations to pursue their own aims, when it might be possible for some of them to attain a larger prosperity by sacrificing the interests of humanity—even if this interest were certain?

If free-trade is incapable of securing for all nations a larger prosperity than protection, if there are nations which lose under free-trade and gain under protection, free-trade is for such nations nothing but a system of constraint against nature (why should we not risk the words a *system of slavery*?).

(158) There lies the great contradiction of the League of Nations.

The League of Nations represents, as is so often said, the extension of democracy among the nations

But, according to what we have said, protection (or, better, the right of deciding for protection) forms a part of the elementary rights of nations.

When the practice of this protectionist right secures pros-

[1] JOHN STUART MILL, *op cit* Chap XVII, p 392, puts this problem in a very satisfactory way

"The labour and capital swallowed up in order to render Holland habitable would have produced a much bigger revenue had they been transported to America or to Ireland" "But who would have dared to recommend to the Dutch not to consider first their own country?"

perity for a nation (even by risking the prevention of the best solution for humanity) it is both reasonable and legitimate It constitutes, indeed, an elementary right for national progress.

But when the League of Nations puts, alongside of the ideals of peace, the ideal of universal free-trade, it tries to impose a system which—at least for a certain number of nations—is a system of disadvantageous discrimination. This is the absolute antithesis of the democracy of nations.

(159) There is a case—a single one—where the absolute and universal free-trade system might be justified (keeping in mind, of course, the supposition that this would mean the best solution for humanity)—it is the case where the disadvantages of free-trade to certain nations could be corrected by certain conscious measures of distribution

In the interior of a state, a redistribution of profits among all production branches and all social classes is always possible, the errors and the inequities of an optima solution may be corrected at any time.

The problem of the economic organisation of a State is set in two terms.

> (1) First to realise the best form which assures maximum productivity to a nation, leaving aside questions of equity and justice.
>
> (2) To correct by interior regulations of redistribution the unjust effects of this maximum organisation of production.

The secondary possibility of regulating distribution—without considering the equity and equilibrium of interests—allows the choice of a solution which presents the best national production

However, this is otherwise with the solution supposed to be the best, by universal free-exchange. It is impossible to regulate distribution among different nations.

Only the first act can be played; viz., the constitution of the production system according to the law of the largest productivity; the second act, the most equitable distribution, is forbidden.

This is what all free-traders ought to understand.

International *political* organisation is the indispensable condition for equitable free-trade (no conquerors and no conquered)

Whether free-trade for the whole world, or a continental customs union, be in question, the total territory of any such economic unit must belong to the same political unit.[1]

Distribution and redistribution can only be guaranteed by political units. Without the political unit, any economic unit, large or small, formed by several nations will always have its profiteers and its dupes

The device of such a combination would be. "*You* renounce, and let *me* become rich"

(160) We must make a very important remark referring to the sense of the best economic formula which free-traders pretend to secure

There is an absolute ideal formula which is quite independent of any historical circumstances [2]

It is the formula which the world would adopt if some infinite intelligence were to make *tabula rasa* of all present-day realities, and were to organise *ab ovo* the production and distribution of all commodities, and this in such a manner as to secure the highest production in the world.

This distribution alone would be the absolute ideal one; it would be the *optima optimorum.*

But the ideal formula in the direction of which the world moves to-day would be quite different It would be the ideal capable of combining the *optima optimorum* solution together with the existing distribution of present-day productive energy.

The historical realities of the present economic configura-

[1] GINI (*Geneva Conference Report*)
"The complete execution of the free-trade solution now favoured by various influential people, would not be opportune unless a 'Super State' could guarantee the continuity of such a policy, even in time of economic crisis and could exclude war eventualities which would necessarily put an end to it"

[2] WOYTINSKY, *loc cit*, Chap IV, p 18
"National conditions never progress if in any country cattle-raising, agriculture or a particular branch of industry predominates This is rather a question of historic evolution."

tion of the world cannot be effaced, nor even radically modified, without the negative efforts of any such transformation being greater than the positive advantage of any redistribution of productive energy

It is not always the best plan to reconstruct or to transform an edifice, even though it may be an inconvenient and a preposterous one.

The absolute ideal, if there really is one, might be reached only if there were no other edifice to be constructed

Therefore, free-trade, even in its wildest dreams, cannot arrive at the absolute or theoretic ideal represented by the *optima optimorum* solution

All this doctrine's conclusions are founded on the supposition of this ideal theoretic distribution of the world's productive forces Free-trade therefore cannot lead us to the ideal theoretical solution, but only to a solution which juggles with historical truth [1]

It means that the benefits of free-trade, which depend upon the realisation of the ideal solution, cannot, and will never be obtained, because this solution—even if it really exists—is never realisable. All the optimistic solutions of free-traders are therefore not to be trusted

(161) To resolve the actual economic problem of the world requires an uncommon power of conception and a continual detachment from actual prejudice

Many cherished and hackneyed ideas must be relinquished in order to attain to a fresh conception of economics.

Above all, we must break loose from all that seems to be personal interest. The great industrial nations especially must understand that they cannot construct a solid edifice upon the actual monopolist situation.

Monopoly cannot endure, and the loss of paramount power

[1] JOHN STUART MILL, p 316 ·

"The superiority of one country over another in any branch of production, results only from that country having been the first to start it."

CAREY, *op cit*, Vol III, p 243

"Every progress towards liberty, in humanity, in the last forty years, has been the result of a determination to resist the centralisation of trade established by England."

does not always mean the loss of anything real and substantial [1]

History shows that the great industrial countries of Western Europe have lost many of their monopolies, and yet their position has not become worse, but the reverse

England profits more from the fact that the United States have become a powerful industrial country than if the latter had remained an agricultural colony.

The world must not be dominated by monopolies and the threat of exclusiveness. Older nations must not indefinitely terrorise younger ones.

It is true that among young nations there are some with similar terrorising tendencies.[2]

(162) Happily the evolution of the world works, after all, towards a certain pacification We have already optimistically dwelt upon this.

We have shown a general tendency for industrial articles to reduce in price as compared with agricultural articles (see par. 133), and for industrial productivity to equalise agricultural productivity (see par. 137).

Protection, favouring the process of industrial decentralisation, leads to the progressive industrialisation of the world, and this industrialisation quickens the equalising tendency

The great merit, then, of protection is this double work of levelling.

On one hand, protection geographically spreads the benefits of industrial development to all countries of the world, on the other hand, protection helps to bridge the existing gulf between industrial and agricultural productivity. And this last operation helps to determine standards of living and the " joys of man here below."

On the contrary, free-exchange hinders this process, and

[1] LEVY, *op cit*, p 106

" It is very difficult for individuals as for nations to understand that diminution of paramount power does not mean diminution of all power "

[2] It might be said that in industry older nations wish to overwhelm the newer ones, on the contrary, in agriculture, the coming nations (Argentine, Brazil) seem to wish to crush the older nations.

accentuates the difference between the standards of living of different nations.

This is why, somehow, protection may appear as the *Socialism of Nations.*

(163) Protection—according to all we have shown—is not a system applicable only to rising nations

It is equally applicable, in the conditions and limits of our theory, to great industrialised countries

A temporary decline in a branch of industry of large productivity may make it advantageous for a nation to help this industry by protection (see par. 79).

(Conversely, no loss is incurred if the branch which is declining has a small productivity compared with the average productivity of the country)

That is why, even for a country like England, protection may, in one case, be a real means of enrichment or in another a means of avoiding impoverishment

England was formerly capable of supporting free-trade—because it was strong enough for this.[1]

Nowadays it cannot support it, and will be obliged to look to protection instead of to the exhortation, now often addressed to the English people: "Buy English goods."[2]

(164) Therefore, both for backward countries, in process of industrialisation, as well as for old industrial countries, protection—when rationally applied—may claim its due.

It may be adapted to the needs of all economic structures, and to all phases of the evolution of a country.

It may help a nation in circumstances which do not depend on time and place.

Finally, in the evolution of the world it tends towards the most legitimate aims equitable repartition of benefits

[1] FRANCIS, *op cit*, p 40:

"It is a fact that free-trade did not cause us any losses at the beginning We were too strong for this"

[2] *Ibid*, p 30.

"Is there anything more pitiful than to see Great Britain's legislators begging the people to keep them in their seats by buying *voluntarily* goods which it is the Government's business to *oblige* them to buy?"

and enjoyment; correspondence between human effort and profit—in one word: Justice.

(165) We are at the end of our efforts

We have done everything possible to get at the truth, the real truth, and to refrain from the sentimental deductions of free-traders.

Free-trade is merely the result of a superficial and sentimental confusion between economic freedom and general freedom.[1]

Free-trade does not mean the possibility of a country organising its production according to its interests, but the reverse

Protection represents freedom and independence.

The real independence of a nation is only obtained by creating industrial means which secure national defence and national wealth In a modern nation, independence spells wealth

Well, these means and this wealth are favoured by protection. A country may be ruined by inactivity. Historically, no nation has ever been ruined by labour and production.

Free-trade, without arguments in conformity to the actual state of the world, is no longer a scientific theory It is no longer a doctrine[2] It is a prejudice The idea of liberty has nothing common with it. Free-trade is neither liberty of industry nor liberty of production.[3]

It never means freedom of nations, and how much less of weak ones!

So, in the words of Thiers, which may fitly serve as a conclusion:

"If political liberty is the protection of the weak, commercial liberty is the triumph of the strong."

[1] CAWES, *op cit*, p 696
"Ideas presented under the form of liberty always have a strong attraction"

[2] FRANCIS, *op cit*, p 36
"Free-trade? It is religion of profits"

[3] *Ibid*, p 97.
"A form of free-trade may have existed, but it never meant free *industry*"

CHAPTER IV

REVISIONS

(166) Now that we have reached the end of our work, we believe we have raised many doubts as to the value of the classical doctrines

The reconstruction of theories, up to now thought untouchable, the new notions we have tried to bring into discussion, and our conception of the true direction for a nation's efforts, create new points of view, in the light of which it would be very interesting to consider the old doctrines and their authors

This is why we have thought it useful to examine the works of some of the great economists.

Under the title " Revisions," we shall review their writings in the light of our own conceptions

It is simply an attempt which will allow us to classify and state more clearly all that might remain obscure in our exposition.

It cannot pretend to be a thorough examination of all the writings of those schools of thought. It is merely a one-sided sketch of the points of view with which we had to deal in our book. We venture to present this revision to our readers under this modest aspect alone

THE PHYSIOCRATS—*LAISSEZ-FAIRE* SCHOOL

(167) There is nothing more delightful to a scientist than to introduce a new idea into science.

Even if there have been imprudent speculations, even if the conclusions drawn were false, a " successful " idea (just as a commercial " success ") is a very lucky discovery.

There are ideas which simply recognise the existence of some fact, which throw into relief an existing phenomenon.

And yet they may have an uncommon vitality. They impose themselves, impregnate ideas and theories, give birth to systems, upset universal thought, provoke terrible controversies and social and scientific quarrels.[1]

(168) Such a notion lies at the roots of the *laissez-faire* system. It is "net production." In any production operation, from gross production, the cost and consumption of commodities implied by production must be deducted This difference is the "net production"

It is upon this idea that we have constructed our system. It is a rich idea, a real gold mine for science.

But how do the physiocrats use it? Here errors begin!

Physiocrats say that "net production" exists only in agriculture, because only there Nature works alongside of man[2]

But what about industry? It merely unites one agricultural product to another by means of labour.

But what does labour do? It does not add anything to the value of the object produced, it augments nothing, it creates nothing, because the value of labour is exactly equal to the value of labour's consumption. Therefore industry does not *produce* anything, manufacturers and labourers form the "sterile class of society"

Would it be of any use in the present day, and after the demonstrations we have made, to contest these absurdities?

(169) First, do the forces of Nature work only in agriculture?

Is there not also in industry motive power (steam, waterfalls) to multiply human forces?

In present-day American industry every workman is aided by almost four horse power.

It may be seen that the physiocrats lived before Watt!

[1] For instance, the idea of plus-value Nothing has been more fertile How many books, how many social disquietudes, historical effects, has it not provoked! Might one not say —"Plus-value—how many crimes are committed in thy name!"

[2] From this point of view Adam Smith was no further advanced than they were He wrote "In manufactures, nature does nothing, man does everything"

In their days production knew only two elements: Nature, which alone provided raw material (and very little power, merely for windmills and sailing-ships), and man, who, with his own hands (or helped by animals), was the sole source of industrial energy.

What a revolution to-day! Side by side with mechanical energy there are powerful chemical energies which expend themselves inside the great furnaces and retorts. Man only prepares the meeting-place of chemical elements which will develop their internal forces in formidable reactions.

(170) And to continue the physiocratic postulates: Does man in industry produce exactly what he consumes? Man has always produced *more* than he consumes. The physiocrats were not right, even for their own times, and how much less for ours!

We need only compare, as we did for American industry, the average net production of each producer with the average wages, and estimate the excess (*see* column $\frac{f-d}{a}$ in Table H, par. 27). This surplus is the most varying element in different human activities. In many industries it is much greater than wages!

Therefore the part that labour produces over and above wages is generally much greater than the wages themselves.

For the whole of American industry in 1914, the average net profit was $1400 per worker, and the net wage was $580 per workman

The surplus of exchange value produced by a workman for the country was $820—that is, much higher than the wages themselves!

And yet—according to the physiocrats—industry has no plus-value!

On the other hand, physiocrats pretend that wages represent nothing more than what covers the strict necessities of the worker's life.

But, if it were so, then all wages in the same country ought to be the same. This was not so, even for the time when the physiocrats were writing. It is not necessary

either to prove that that is not so nowadays. Look through American or any other statistics !

The important social value of industry is its capability of raising the standard of life of its workers over that of agrarian workers. In this way industry involves the welfare of peoples

(171) In spite of their errors, physiocrats may claim to have pointed out the importance of the net production, and to have wished to classify human activities according to their net production.

But to classify, it would have been necessary to reduce net production to a common measure

The best indicated common measure would have been man, who participates in production (see par 14)

The natural aim of all human industry is to graft upon this unity the greatest possible production

This is why the criterion we have used (see par. 14)—namely, net production per workman per year—is a natural social and economic criterion. Physiocrats did not get so far; they lost their way

They prevented themselves from drawing exact conclusions, as they constructed their theory on the absurd postulate that labour is standardised, which would prevent human activity from being classified according to the output of its labour.

(172) The doctrine of *laissez-faire* remains the economic doctrine of that time. It was designed to justify land rents and to be agreeable to the powerful men of that time.

Still, in spite of its narrow and somehow artificial character, this doctrine is full of observations, useful even to-day.

Adam Smith

(172*a*) His prestige is still so great that one may not touch his doctrine without the cry that a sacrilege has been committed.

It is generally supposed that each generation, arrived at

social responsibility, is imbued, in its creative activity, by the ideas of the preceding generation

In free-trade, the influence upon the thinking world of to-day is somewhat ancient, it goes back to Adam Smith and to the immense hold he had upon the minds of his time

His personality dominates all the regions of political economy. It reminds one of Victor Hugo's words "It is he, always he, hot or cold His image incessantly disturbs my mind"

Smith's statements are still looked upon as conclusive

Conrad says "That Smith's free-trade theory contains a fundamental truth no economist would dare to deny."

And it is still recognised that his free-trade doctrine has suffered but little modification. Georg Jahn writes in his article "Freihandelslehre" [1]

"The systematic form which Adam Smith has given to the free-trade theory has been preserved intact by his direct successors and partisans"

This conclusion does not concern only his immediate successors, as further on the author tells us:

"The same thing (no new contribution) happens to the large number of economists who hold the same opinions and who participate at the 'economic congress' in which they fought, in writing, for the realisation of free-trade."

Moreover, this is agreed by all familiar with the march of economic thought from Smith to our times, and they are sometimes rendered desperate by the scarcity of new arguments for free-trade.

(173) First of all it must be recognised that Smith's intuition was really marvellous. Unfortunately he is often lacking in precise information on all economic realities (except those of England) and in profound analysis of certain phenomena.

What we most admire in Adam Smith is his constant preoccupation with the idea of establishing a hierarchy—just as the *laissez-faire* school was—among economic activi-

[1] *Handwoerterbuch der Staatswissenschaft*

ties, and to this end he adopts certain criteria for his classification.

The first criterion is the quantity of productive labour utilised or provoked by a productive activity; the second criterion is the quantity of exchange value added each year to the national revenue.

It is true that in the practical application of these criteria Smith made one great error, classifying agriculture first, and then industry. Well, the classification should be the reverse.

According to all we have shown, industry comes before agriculture.

Nevertheless, the idea of making such a classification and establishing such criteria is very remarkable.[1]

(174) Smith's errors have two principal causes. He founds the idea of value upon the cost of production, and he considers human labour as a uniform element.

It is useless to insist upon the first point, since it has long ceased to be scientific.

The second is still in vogue, and often leads to great errors.

Human labour is not yet uniform, on the contrary, it is still very unequal and very differing. Perhaps it is the most differing of all economic elements and of all things which have a single name.

There always were great differences of *skill* in the various kinds of labour and in their productivity.

Nowadays those differences have immensely increased.

The reason is that in modern industry the part that man accomplishes is of secondary importance in relation to the labour of the forces subdued by man.

In actual American industry, each workman does not work alone, but is assisted by four horse-power, such being the average horse-power for each workman.

Human labour is both helped and encircled by physical and chemical forces, man often accomplishes merely a work

[1] We may say that our theory, starting with the idea of classification, is connected with the gospel according to Smith.

of supervision. He connects natural physical forces to chemical ones and allows them to work together

There are factories for uniform products created by chemical processes, such as cement factories, carburetting works, caustic soda, and glass factories, where, as we have shown, man is just an intermediary between the natural forces which work by themselves. Man becomes, to borrow a term of chemistry, a kind of dissolvent, necessary to start the reactions among the different elements

From the economic point of view, it is remarkable that the most productive labour is not that of skilled, but of unskilled workmen. It is the automatic assistance of machinery that enables the latter to show such a high net production.

Under such conditions, it is not to be wondered at that the difference of productivity of various branches of industry is so great.

According to American statistics, as we have mentioned (see Table A, par. 16), there are industries with a productivity per workman per year amounting to $8300 and others where it barely reaches $645

And yet there are economists who, following Adam Smith, continue to treat " labour " as a homogeneous element, and who still assert openly that products are exchanged according to the rule " equal work for equal work " !

The absurdity of the free-trade theory lies exactly here. Its bases—the theory of value, cost of production, and the uniformity of labour—are completely wrong.

These conclusions are still maintained, although resting upon a wrong foundation.

There is nothing more paradoxical in the whole world ! And on such a paradox the economic life of nations is to be built !

(175) Nothing is more open to criticism than Adam Smith's second criterion. The *quantity* of human labour utilised to be a sign of superiority in any branch of production !

On the contrary, economy of labour is a criterion. It is

not the maximum of *labour*, but the maximum of the *productivity* of this labour, which should be the sign of any economic superiority.

If Smith's criterion had been right, the greatest economic labour of all times would be the pyramid of Cheops !

(176) An objection worth examining may be raised against the principle of hierarchy

M. Rist believes that the idea of hierarchy is not in accordance with the idea of division of labour, which proclaims and proves the " equality " of the different human activities.

Here there is just a simple misunderstanding All depends upon the point of view from which equality or hierarchy be considered

If it is an ethical, philosophical or political point of view, all human activities are equal, since they are all connected with the social necessities of the division of labour

It is not usual to-day to make too great a distinction between different kinds of labour. But from an economic point of view it is quite otherwise.

Labour is still unequal, either because of implied unequal subjective qualities, or of objective conditions (outside the control of labour) where work is developed.

Therefore it is useless to add another element of confusion

The hierarchy of labour from the solely economic point of view exists, and constitutes a real and fundamental element of modern production.

(177) But let us come back to Smith's errors.

Why does he place (following the physiocrats) agriculture before industry? Why does he consider that industry is less productive than agriculture? Because, he says, agriculture always gives three returns.

(*a*) Reconstitution of the capital employed (seed, etc.).
(*b*) Maintenance of the agricultural labourer.
(*c*) Rent of the land.

Whilst in industry there are just two profits ·

(*a*) Recovery of employed capital.
(*b*) Maintenance of labour.

Rent does not exist here. Agriculture is therefore like a family with three children, and industry with two ! Therefore agriculture is superior—one can hardly imagine such naive simplicity Is it sufficient to oppose three returns against two ?

But what is their value? What is their *weight* ? It would be ridiculous on our part to insist any longer. We have seen how weight should be established.

The measuring instrument of labour allows us to affirm that industry almost always dominates agriculture, and that there are but few cases in which a certain agricultural production may be superior to some inferior branches of industry.

(178) It is easily seen that Smith was always searching for a real measuring unit for labour :

" There may be more effort in an hour of application to a trade which requires ten years of apprenticeship than in a month of work of a simple and unskilled nature, but it is not easy to find an exact measure of the difficulty or of the skill."

The measure was not discovered ; it was always sought for in the wrong direction.

It is not individual " effort " which is important ; it is not the " difficulty " or the " skill " which must be measured ; it is the social value, the economic result, which counts in exchange and production problems.

The question is not to measure only the individual's labour, but to measure the labour of all the complexes in which men work—persons, plant, organisation—and to compare the net product of this combined labour with the number of men engaged therein.

It is quite true that when Adam Smith (1776) published his book, which was to become a classic, modern industrial evolution had not yet begun.

Man was not incorporated with powerful organisms of iron, steam and chemical forces.

He was much less *helped* than he is nowadays. Therefore when people thought of production, it was natural to think only of man.

This must not be forgotten, nor must we be guided by conclusions founded upon economic realities which have long since vanished.

(179) One of Smith's synthetic ideas, often brought into discussion, affects protection in the fullest sense:

"There is no regulation of commerce which could augment the industry of a country above that which the capital of this country can maintain All that it can realise is to make a part of this industry take another direction than that which it would have taken without this, and it is not certain whether this artificial direction promises to be more advantageous to society than that which the industry would have taken by following its own bent" (*Wealth of Nations*, Book IV, Chap II).

This assertion is rather timid and hesitating: "It is not certain" He cannot say more.

On the contrary, our demonstration is categorical It shows that a country has a sure profit from protection

From the strictly economic point of view there are no doubtful cases. Either protection is favourable or it is not. From our reasoning this may be said in advance in every particular instance, because one may measure beforehand the advantage or disadvantage of protection or free-trade for the national economy of a country.

(180) Much more categorical is the assertion which refers to two countries exchanging goods of equal value

"It must not be thought," says Smith, "that no one gains and no one loses" On the contrary: "A commerce which is encouraged by subventions and monopolies can be disadvantageous for the country in favour of which these measures have been taken, and it is, in fact, as I shall show later."

We have shown that the country which exports goods of small productivity is at a disadvantage in international trade, and the country which exports goods of large productivity at an advantage.

Well, as subventions and even monopolies (if logically applied according to national interest) lead to a rise of the average level of the productivity of the country and to the growth of average export productivity, they cannot be disadvantageous, but the reverse.

(181) One of Smith's statements, summed up in a remarkable manner, will enable us to show the value of our own conclusions

According to Smith, there is a national balance-sheet more important than the commercial balance-sheet. The latter is the difference between the annual production and consumption of a country.

When production exceeds consumption, the excess serves to form capital. The latter balance may be favourable even when the trade balance is unfavourable.

Everything so far asserted is only too true. But we can demonstrate that it is exactly protection which, by encouraging the superior activities of a nation, arrives at this result.

Indeed, in every enterprise with large net productivity consumption is much below production.

Now, all that exceeds consumption of workers and employers is savings, which every year increase national wealth.[1]

In the statistics of production the possibilities of savings

[1] The most important thing in the formation of capital is to secure the greatest possible revenue to the nation. For there is always a large part of national revenue retained for the formation of new investment capital

According to statistics of 1902 (Woytinsky, Vol I, p 196) 15% of the total of £1750 million of England's revenue—*i e* £264 million—represented the growth of national wealth

For the same year, 10% of the total of £2000 million of Germany's revenue—*i e*. £200 millions—was the growth of national wealth

Of course, these figures of the growth of wealth did not entirely represent savings

Real private savings still represent an important part, as, for instance, in the United States, the annual savings amounted in 1900 to $1569 million of the total revenue of $17,965 million, *i e* 8 7%.

must be sought in two directions. First in wages: the larger wages are, the larger is the margin between necessities of life and the total wage bill.

It is quite true that with the growth of wages the standard of life also grows, but it is just as true that opportunities for saving (which cannot exist with too low wages) increase or decrease with wages.

Finally, possibilities of savings lie also in the difference existing between net production and wages (see par 170 on the importance of this difference in American industry). This difference, outside the paying off of cost of installations (see par. 10), includes the profit of the capitalist, reserve funds, taxes and new investments.

But new investments entirely represent a growth of national wealth, and as for the profit of capital (and even taxes),[1] a part of such funds still goes for new investments, and is therefore still an increase of national wealth.

Consequently, industries which allow of a large net production per workman (large productivity) always have great opportunities for the accumulation of capital

It is not the same in inferior industry or in agriculture, where the net production is least, and where, because of the miserable life of these peasants, possibilities of saving are very small.

Smith says (Book IV, Chapter II): "It is not industry but savings which cause the immediate increase of capital" and this provokes Carey[2] to this severe comment: "These words express the ideas which are current among degraded parts of the human race."

Therefore, it is still industries of high productivity which render Smith's national balance-sheets favourable—that is to say, the difference between the annual net production and the annual consumption of a nation.

We must again repeat, Smith's hypotheses are correct, but his conclusions are wrong

This reminds us of the words of Sumner [3]

[1] Does the State not employ a part of its revenue for the erection of public monuments or for the redemption of foreign loans?

[2] *Op cit*, Vol III, p 55.

[3] *Op cit*, p 23.

" Free-trade is not a theory in whatever meaning one may give to the word theory. This is only one of the modes of liberty." [1]

List

(182) As in all great economic works, List's work bears the mark of the country in which the author wrote and the times in which he lived, as well as of his own personality.[2]

In 1834 a very important internal market is created by the foundation of the Zollverein In 1841 List's book *Das nationale System* is issued, a book full of actuality in a polemic atmosphere which permeates the whole work.

(183) M. Rist, judging List's book in a synthetic way, says :

" He met with fresh realities which secured to his book a durable theoretic value "

This is, to us, a matter of doubt.

For a theory to be durable it must explain the general and permanent causes of the phenomenon which it pretends to " theorise." The durability of a theory is in virtue of its generality in time and space

But List did not found a theory of the protectionist phenomenon. It is sufficient to observe that actual protection far exceeds the framework in which List explained and justified it. Protection is therefore quite other, with a much wider extension than List believed it to be.

List never contested free-trade He did not refute free-trade arguments one by one.[3]

He did not build up a proper system of a general and permanent character, which may constitute a complete answer to free-trade.

In short, he did not take the bull by the horns

[1] PATTEN, *op cit*, p 22 " Free-trade in degenerating into a simple article of faith has lost its scientific basis "

[2] M RIST writes " They (his works) are the history of Germany from 1800 to 1840 "

And LIST also says " The history of my book is the history of half my life "

[3] BICKEL, *op cit*, Chap VIII, p 140.

" (By List) theories of free-trade are not denied, but simply confined to limits

" Free-trade is not discarded, but retained as final end "

(184) He altered the problem of protection or free-trade. He admitted and recognised the general principles of free-trade to be true. Instead of a theory of generality, he put forward a theory of exceptions.

He craved for protection only a purely provisional rôle, dependent upon numerous conditions and restrictions, and, what is more serious, he presented protection to public opinion as a sacrifice,[1] a necessary evil, whose only excuse is of being temporary.[2]

List founds all his system upon the idea of a present sacrifice in view of a future recompense, this is the promise of another world—it is mysticism [3]

He puts before a nation a programme which begins with sacrifices, but promises splendid rewards. This, says M. List, is the "dynamic conception" of protection. The word is very fortuitous

(185) But if it had been shown, as we have done, that protection, well and rationally applied, is a direct and actual value for a country, and that a new factory, even from its inception and even if it is inferior to a foreign one, brings net and certain profit to a country, may not protection be justified as a static conception?

In reality, for a country, protection is not good business only over a long period: it may be also good business at an actual moment.

But this constitutes the great difference which completely changes the aspect of the protectionist phenomenon and renders List's theories insufficient as contrary to the truth.

[1] "The *harm* that is caused to a nation by a protectionist customs tariff consists in a loss of value, while it gains forces from which it will be able to produce for eternity an incalculable amount of values

"This loss of value must therefore be considered as the cost of the industrial education of the nation"

[2] "If the protectionist customs tariff presupposes a sacrifice of value, this will be compensated by the creation of a production capacity which means not only a bigger amount of material good for the nation, but also an industrial independence in time of war"

[3] "A nation must give up and sacrifice material goods in order to acquire moral and social forces, it must sacrifice present advantages for future ones"

(186) One point in his ideas deserves full praise. It is the importance he gives to the moral and material productive forces of a nation

The indirect profit resulting from the development of these forces is an immense advantage for a country, even if—according to List's supposition—there were, from the national point of view, sacrifices and not profits

And his famous sentence: "The capacity to produce wealth is much more important than wealth itself," remains a *vade mecum* for economists and statesmen of all time

(187) As said above, List does not attack the basis of free-trade, he admits the fundamental principles of free-trade when he says that "restriction is the means, liberty is the aim."

We have shown that cheapness alone is not sufficient reason for a nation to gain by importation, instead of producing at home (see par 36) Ceding this point to free-traders, he cedes all

(188) List limited the application of protection only to certain countries, at certain epochs of their development, and in certain degrees only of protection.

What are these nations?

They are: "All nations which possess all the qualities, all material and moral resources, required to establish an industry, etc."

But how can all these qualities be recognised without having tried to produce what free-trade interdicts us from producing?

Walking teaches one to walk.

By resting the validity of protection on the feeble grounds of "quality" and "moral possibilities," List greatly weakens his principles.

He hands it over to the ill-will of free-traders and to the arbitrary passion of protectionists for their own interests.

As regards the line of separation between what may be and may not be protected, he veers from the domain of science to that of sentiment and caprice.

List's protectionism remains therefore an unsound and relative protectionism.

(189) The limits to protection imposed by List for certain epochs of national evolution—namely, at their industrial beginnings—is just as uncertain as the limit of these nations themselves

Who shall say when an industry may be considered as having passed out of its infancy?

No industry will admit that it is old, for youth brings the advantage of List's " educative protection "

According to Thomson (*Political Economy*), whom we cite after Jenks, an industry requires a period of two generations to be able to capture the home market.

But it is quite evident that we are here in a totally arbitrary domain. Even American industry claims the privilege of its extreme youth !

Here, then, is a second point in which List limits protection, and in a most inconvenient manner : by means of a barrier exposed to the most arbitrary of all interpretations.[1]

[1] It is interesting to note a calculation made to establish mathematically the duration of a protectionist tax according to the loss it represents and the annual profit which the protected industry might reap after the cessation of protection

The calculation—mentioned by Sumner—was made in the *Journal des Economistes* (August-September 1873)

Let a be the average annual loss for the whole period of protection, b the annual profit of the industry after the abolition of the protection, x the number of years that the protection is applied, and r the normal rate of market discount

The loss represented in actual value, calculated at the moment when the protection commences .

$$a + \frac{a}{(1+r)} + \frac{a}{(1+r)^2} + \frac{a}{(1+r)x} = 1$$

the profit realised later on, calculated at the moment

$$\frac{b}{(1+r)}x + \frac{b}{(1+r)}x + \qquad \text{(to infinity)}$$

To have equality between profit and loss, *i e* equality of the two series, we must have

$$X = \frac{10\, g\left(\frac{b}{a} + 1\right)}{10\, g\,(1+r)}.$$

For $r = 6\%$ we have

$x = 5 \quad -b = 0\,33\,a$
$x = 10 \quad -b = 0\,80\,a$
$x = 25 \quad -b = 3\,29\,a$
$x = 100 \quad -b = 3\,39\,a$

(190) Finally, with reference to the amount of protection, List is very categorical, demanding arbitrary limits.

Indeed, he writes:

"It must generally be admitted that a country or a branch of industry which cannot take origin with a protection tax of 40—60% at the beginning, and cannot be sustained later with 20-30%, is altogether wanting in the natural conditions of a manufacturing industry."

Our demonstration in par 85 dispenses us from repeating our reasoning. There is no limit which may *a priori* be imposed to protection. Why 60%? Why 30% or 100%?

We have quite clearly shown that in certain cases it might be proved, looking only at the economic point of view, that a customs tax of 10% is absurd, and, on the contrary, in other cases it may be proved that a customs tax of 200% may be admitted, as its final purpose is clear profit for the country.

To List's empiricism we have offered a logical criterion which enables us to trace for each country the frontiers between the natural domains of free-trade and of protection.

(191) On the other hand, the empiricism for which we blame List, and which is the very consequence of the fact that he has not created a real theory of protection to guide him in particular cases and give him certain objective

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Let us explain this If protection lasts five years, the loss which it causes will be compensated if the annual profit, after it ends, is 0 33 of this loss

If protection lasts ten years, the loss it causes will be compensated if the annual profit, after it ends, is 0 80 of this loss, and so on

There are many observations to be made upon this calculation, although it is very ingenious

First we do not recognise that protection represents a loss A customs tax is only a displacement of a sum of money in the country itself Then a part of the first calculation is arbitrary

It is the date to which value is adjusted—namely, that of the commencement of production

But the interests of a nation must not be considered as the interests of a private person, and must not be referred to in a certain moment only

The life of nations is eternal

If the sacrifices of the present are not equal to those of the future, they do not differ as much as is shown by the calculation of the combined interests

But we will not labour the point

We shall not give these speculations more attention than they merit

methods of appreciation, may be found throughout his book.[1]

[1] As we announced in our introduction, we have constantly refrained from taking up the old protectionist arguments, which we would not even wish to note in passing

Still, it is interesting to raise afresh three of the classical protectionist arguments in the light of our own theory

(i) The first is national defence

It happens that the most important industries for national defence—for instance, some chemical and metallurgical industries—are also industries of very high productivity

The foundation of such industries is not only a necessity for national defence, but also good business for a nation

(ii) The second argument is the protection of national labour

HENRY GEORGE (Chap XXIII, p 317) says

"The truth is that the lies of protection gain their real force from a great fact

"This fact is that there is a greater number of workmen seeking work than of workmen having the possibility to find it

"It is in this fact in which resides the true force of protection and not in the learned arguments of its advocates"

This argument of protection of national labour would not have much sense in Ricardo's conception, according to which all labour is equally profitable

But it has a very clear and exact sense in the frame of our conception Protection of national labour is not protection of all labour, but only protection of very productive labour, *i e* skilled labour

Every time that, through protection, a new industry is created, there is no more labour created than when this industry did not exist, but there is better labour given

Now, every time there is a displacement of labour towards more productive labour, there is a clear profit gained for the nation (see par 79) Such displacement is therefore profitable to a nation

On the contrary, in the conception of uniform labour (equal productivity) no displacement may change the total production of the nation, therefore it cannot really be advantageous or disadvantageous

The clear profit to the nation is shown by the growth of the purchasing power of the home market—namely, a real increase of labour in other branches of production

Consequently, protection increases not only the quality, but also the quantity of national labour and brings about a real increase of employment

(iii) The third argument is the creation of a home market Let us, for instance, quote Hobson, *op cit*

"Protection is a bad palliative, as it does not augment the capacity of consumption in order that this remain on the same level as production"

The free-traders (for instance, Taussig, *op cit*, p 509) pretend that there is no new market created when a new cloth factory is founded The workmen of this new factory used to eat even before the foundation of this new factory ! ! !

Then foodstuffs were exported and cloth was imported, and now foodstuffs of the country are exchanged for cloth of the country Nothing is changed

There is nothing more incorrect than this reasoning It is quite true that the workmen of this new factory used to eat before the foundation of the new factory, but—let us add—they were not eating so well Afterwards, their productivity being larger, their wages were also higher

The whole market has an increased purchasing power Protection has created and developed the home market

The best proof of his empiricism and of his arbitrary affirmations is the fact that, generally speaking, he is against all protection for agriculture [1]

Now, there is no reason whatever to exclude *a priori* a certain branch of production from protection.

According to what we have shown (see par 84), every private case must be examined, and if a certain branch of production (agriculture or any other) shows too high a productivity, it might very well be helped in its development by a protection tax.

In agriculture there are branches of production with a very high output—for instance, the culture of vines and that of certain plants used industrially.

The productivity of those branches may very easily be greater than the productivity of certain industrial branches, and their protection may be much more necessary than that of certain industrial articles.

(192) But why does List exclude agriculture from protection? For three reasons:

(*a*) First, because agriculture profits indirectly by industrial development This is no reason.

There are also some industrial branches which profit indirectly from the development of other industrial branches Should we therefore not protect them?

(*b*) Then because their raising of the price of agricultural products through protection impedes industry.

This is not a reason either.

The branches of industry provide one another with what they require. Is this a reason to refuse protection to any one of them? No! In a customs tariff the taxes may be developed in such a manner as to permit every industry to have the protection it requires, although it may be handicapped because of the protection that is offered to other industries by which it is supplied

(*c*) Finally, as a last argument against the protection of agriculture, List says that agriculture is more localised than

[1] HARMS, *Die Zukunft der Deutschen Handelspolitik* (Jena, 1925) "It is not comprehensible why agriculture is not included in the framework of List's educational idea."

other industries, being more strongly tied to territorial conditions, and protection would disarrange a legitimate equilibrium imposed by Nature.

Certainly there is much truth in the argument. But the rigidity of agriculture, opposed to the larger elasticity and mobility of industry, is not as marked to-day as it was in List's time

Scientific methods of culture, such as the use of fertilisers and agricultural machinery, have enlarged the possibilities for man to influence natural conditions, and to escape from the strict localisation indicated by Nature

But outside all this, all these natural difficulties which determine the equilibrium of an industry have their final and synthetic expression in productivity, such as we have formulated it And if, in spite of all those difficulties, the productivity is such as to demand a protection, it is not by an *a priori* reasoning that any agricultural branch or the whole of agriculture could be excluded from protection

(193) We must observe that we come practically to conclusions similar to List's, in regard to the exclusion of most agricultural products from protection

But our reasons are different

It is because of the small productivity in general that we do not find it advantageous to protect all branches of agriculture

It is our general and uniform criterion which tells us that, generally, there is no interest in protecting agriculture.

However, our theory has exactly this advantage, of allowing us to judge all branches of production without false estimates or prejudices. It is not a theory of industrial protection, but of protection in general

(194) List's incomprehension is manifested not only for agriculture, but also for other points.

For instance, List accuses the mercantilists of having pretended that the necessity of restrictions (of protection) is absolute and universal, and Mr Rist, glad that the mercantilist theory of commercial balance has been for ever

rejected by science, praises List for having replaced it with the idea of industrial education

It is true that the mercantilist theory of the commercial balance was wrong—under the rough form which had been given to it. But it had the merit of being an attempt at a general theory of international trade List's theory cannot take its place, because it is a particular theory with a temporary application, which is incapable of explaining international exchange in all its scope.

(195) Another example of List's non-comprehension is that he recommends to very poor or backward countries, for which industrial education would be premature, to maintain free-trade, which forms the first and elementary step of economic education! He even believes that any hasty application of protection is punished by the decrease in welfare (*wohlstand*) of the nation.

According to what we have shown, this reserve of List's is not justified. Even at the first degrees of civilisation there are elementary industries which may arise, the productivity of which is greater than the very small average productivity of so little advanced a country—however small their productivity might be

Even in the most elementary phases, industry and agriculture maintain their relative positions—that is, industry maintains its superiority over agriculture

(196) Nevertheless, List is to make even more reserves as regards the application of protection

He refuses the right of protection to small States when he says

"A small state may never reach a complete development of the different branches of production in its own territory. With it, any protection becomes a private monopoly."

Concerning the minimum territorial limit to be protected, we have shown that it may fall much more than is usually expected, and that, especially for industries, it is advantageous to secure protection even for very small territories, such as a town.

As to private monopoly, if it takes place, it presents a disadvantage of internal order, but the whole nation loses nothing by it.

(197) But in spite of all those lacunæ, it is interesting to know whether List's influence has been general and lasting, and whether it is List who has given contemporary protection its character

Mr Rist denies this categorically :

" List's system is no more considered the inspiration of modern protection than he is considered the direct successor of ancient mercantilism "

Moreover, there is a well-known non-continuity, a serious hiatus, between List's epoch (1840) and the moment of recrudescence of modern protection, which might be placed after the year 1879.

And, on the other hand, the almost universal and permanent protection of to-day is not only outside List's theory, but appears just as its contrary

If List were still living, he would demand the abrogation of protection in the United States—where there is almost no young industry—the reduction of customs taxes almost everywhere, and the suppression of barriers for agricultural products

(198) In face of this situation, it is not surprising to see Mr Rist stating :

" List did not begin the abstract theory of international commerce ", and concluding : " Neither in practical policy, nor in doctrine, has List's protection left important traces." [1]

[1] M Rist concludes, and with reason, that real protection is not to be found with List, but in other places

But where ?

M Rist seems to direct us towards Carey, who gave " the only complete system of protection which has been issued since List " We admit we were disappointed in Carey's work It contains no new arguments

Jenks, *Henry Carey als Nationalokonom* (Jena, 1885)

" In der Darstellung seiner Schutzzollpolitik hat er zwar oft sichtige Gedanken und Prinzipien hervorgehoben, aber seine Ansicht ist hoechst einseitig und uebertrieben und hat nichts neues ueber diesen Gegenstand gebracht "

But his originality lies in the fact that he extolled protection as a permanent system, valid for all countries and all goods (! !)

The basis of his argument is the question of transport

If his merits in theory and doctrine remain disputable, List has the glory of having had an exact sense of the imperative of his historical period

He has, however, transferred, in a wonderful manner, the idea of nationality from ideology to economics.

"I consider nationality as a characteristic distinction of the system which I have constructed. I founded all my theory on the nature of nationality, as an intermediary unit between individualism and humanity."

This is what we all must do And this is the basis of all our theory when we always justify protection from the point of view of the interests of a nation considered as a whole, and discuss only on a secondary plane the influence of the protectionist system on the classes and individuals of each nation [1]

List knew, better than any one else, the creating power of a nation and the necessity of educating the possibilities of economic development

At the same time, he had the exact sense of the value of the middle classes, and understood the importance of the middle classes in organisation of national forces and upon the play of their activity.

Finally, List has the merit of having imagined, referring to his protection—which he wanted to be transitory—an understanding between all the nations of the world which have reached the high level of prosperity and civilisation. And for his faraway ideal he always refers to his two dearest ideas: "Country and Humanity." There was his motto, formulated in language formed to express beautiful visions.

For it is not permissible to anyone, however good a defender of the rights of his own country, to deny a place for humanity in any doctrine or system, and not to try to find the supreme road which leads to the conciliation of national interests with the general interest of the Society of Nations.

(199) In the pursuit of national economic progress what is most important is the rapid accumulation of capital.

[1] This will be the subject of another work

However, it is here that List fought the great battle with the School (*die Schule*), as he called Adam Smith and his friends.

Smith assumes that protection, by increasing cost of living, decreases saving power, and therefore the formation of capital and the founding of new industries are arrested

This is a vicious circle Free-traders wish to await the accumulation of capital funds before starting new industries. But reality shows that capital is not accumulated from excess of savings in agriculture, but by the growing productivity of industry.

Still, therefore, it is industries themselves which accumulate capital demanded by industries

The flow of foreign capital combined with the effect of protection may break this vicious circle and give free scope to industrial development before national capital has sufficiently accumulated

National capital itself may be formed from this development. Answering the " School," List shows that the power of multiplying capital consists largely in transforming natural forces into material capital, a source of revenue.

But this power, before all, is possessed by industry. And it is always through industry and by economising the revenues from industry that a nation is enabled to amass capital.

Agricultural countries—wishing to remain purely agricultural—cannot, in the long run, even maintain their own population Only industry, created in the midst of agriculture, will permit of intensified production and accelerate the accumulation of capital.

It is surprising that List, although recognising this quality in industry, did not realise its permanent value for industry.

(200) All we have shown only confirms our conclusions.[1] The real theory of protection was still to be constructed

[1] Bickel (Chap VIII, p 149) " List's originality is not in the direction of a well-proved theory, but in the general direction of his mind, manifested in his method of dealing with the problem of foreign trade "

APPENDIX I

A SCHEME FOR THE INTERNATIONAL UNIFICATION OF THE STATISTICS OF EXTERNAL TRADE

It is a well-known fact that statistics of foreign trade are difficult to utilise

Classification of imports and exports is done in different countries according to the nomenclature of their respective customs tariffs

This nomenclature differs greatly between one country and another, and as a consequence in two different statistics under the name of the same group of articles the same goods are not always comprised

For instance, the group " chemical products " does not mean the same thing in all statistics, and does not in all countries indicate the same goods.

And when to these difficulties we add the difficulty of estimating in money the value of imports and exports, we must not be surprised at the contradictory results of statistics !

The most well-known fact, and one so often appealed to, is the non-coincidence of foreign trade statistics. For instance, German statistics show an export of textile products to Roumania to the value of a certain number of millions The Roumanian statistics show an import of textile products from Germany to the value of a certain number of millions These two figures, which ought to be the same, are absolutely different.

In order to be able to weigh all these difficulties, and others not mentioned here, an attempt has been made to devise a single international nomenclature for all customs tariffs and for all statistics of the world.

In the following lines we shall suggest a method which will constitute an international nomenclature for customs tariffs, allowing each country to adapt the tariff to its necessities without changing the unit of international nomenclature.

Our system is essentially based on the idea of decimal classification, applied to all goods that are the object of international exchange.

How should we proceed to constitute such an international nomenclature, *i.e* a unique type of customs tariff ?

First, all goods for international exchange will be classified in

ten large groups. We propose, for instance,[1] the following classification :

0. Live animals.
1. Animal foodstuffs.
2. Various animal products
3 Vegetables in a natural state
4 Vegetable foodstuffs.
5 Various vegetable products.
6 Minerals and transformed mineral products
7 The above-mentioned substances, physically combined.
8 The same, combined chemically.
9 Reserved.

Each group will be classified in its sub-division, for instance, group 2, Various animal products, will have as sub-groups, still according to the decimal classification :

20. Furs.
21. Hides
22 Leather articles
23 Wool and woollen articles
24 Silk and silk articles
25 Various
26, 27, 28, 29 Reserved

Woollen articles of 23 will be sub-divided into

230. Raw wool
231 Woollen yarns
232. Woollen fabrics
233. Woollen knitted goods
234. Woollen clothes.
235 Various
236, 237, 238, 239. Reserved

Article 231, Woollen yarns, will be sub-divided as follows .

2310. One ply.
2311. Two ply
2312. Three ply.
2313 More than three ply.
2314, 2315, 2316, 2317, 2318, 2319 Reserved.

Article 2311 will also be sub-divided

23,110. Two-ply woollen yarns up to 10,000 m. per kilo
23,111. The same from 10,000 to 20,000 m. per kilo
23,112. The same from 20,000 to 30,000 m per kilo
23,113 Over 30,000 m. per kilo
23,114, 23,115, 23,116, 23,117, 23,118, 23,119 Reserved

[1] All the following classification, with its divisions, is only given as an example We have not had the necessary time to study such a classification thoroughly Nevertheless, this example may illustrate the principle that we wish to present

This system will allow the logical classification of all goods subject to international trade

This nomenclature might be composed for all existing customs tariffs in all countries of the world. No article would be missed out.

In a first preparatory scheme all actual tariffs might be united as they now are without any attempt at logical simplification.

In a second scheme one might proceed towards this simplification, eliminating any absurd differentiations, and imposing certain differentiations according to a definition common to all States

For instance, if the yarn which we have just given as an example were classified in a country according to the length per kilo between 10,000, 20,000, 30,000 m , and in another country according to length per kilo between 8000, 16,000, 24,000 m., this classification would require to be unified, defining the articles in all countries according to the same unit of length

Thus a logical and uniform tariff might be established, which would correspond to the necessarily complex variety of different goods.

This single tariff (and this is a particularity of our system upon which we can never sufficiently insist) shall not be a tariff in which the differentiations will be obligatory for all countries

A country could easily renounce certain differentiations of the uniform tariff, remaining, however, within the same outline, thanks to the decimal system.

The nomenclature of each State will therefore be a particular nomenclature, representing a part of the general uniform nomenclature.

To utilise the former example, if a country renounces the decimal differentiations of article 2311, *i e* it does not find it necessary to classify yarn in 23,110, 23,111, etc., according to length per kilo, it would need to have in its nomenclature only Article 2311 of the international nomenclature, *i.e.* two-ply woollen yarns.

But there might be a more complex case.

For instance, a country wants only two differentiations for Article 2311—namely, a yarn with a length per kilo below or above 20,000 m.

In this case, it could inscribe in its nomenclature the combined article of 23,110 and 23,111. And a second article 23,112 with 23,113. Or, with another denomination, " the other 2311's."

With this classification, all displacement of goods 23,110 could not be examined in international statistics But the important point is that we could follow the displacements of goods 23,110 in countries to whose interest it is to put them in evidence separately, and at the same time the displacement in all countries of the goods of Article 2311 could be examined.

Therefore for international statistics we should always have the same basis for nomenclature, and it would always be possible to compare one country with another as regards goods and groups of goods which correspond exactly to the same definition in all countries.

We have shown that a combination of neighbouring articles could take place, and even combinations of neighbouring groups could be utilised for simplifying tariffs in certain countries where too great a complexity is not needed.

But what will not be permitted in any country is to abandon altogether this international nomenclature, by introducing any new article which does not exist in the international tariff, whether by combining two distant articles in the single international tariff, as, for instance, 56,614 with 2322 A simplification of this kind must be forbidden, and the structure of the international tariff must be such as to prevent the opportunity of such a resemblance of different articles

However, if a State wanted to have the same customs taxes for Articles 56,614 and 2322, it could do this, with the proviso that each article be kept in its right place For the statistics of foreign trade, based on the nomenclature of the customs tariff, the identity of the taxes would have no effect, because each kind of goods would be separately classified and in its right place.

APPENDIX II

ON NON-PROPORTIONAL OUTPUT

An aspect of the production problem which was not considered in our demonstration upon international trade and protection is production according to the law of decreasing or increasing output.

Nevertheless, this aspect has been studied from the theoretical point of view of international trade by other authors—namely, by Kellenberger in his article " Zur Theorie von Freihandel und Schutzzoll," published in *Weltwirtschaftliches Archiv*, January 1916.

The greatest originality of this author is that he shows how, in certain circumstances, protection presents a direct and immediate economic advantage for the country adopting it

But, from what we have seen (see par 31), this thesis is rare in economics; generally all arguments in favour of protection admit that protection does not represent an advantage for a country, but, from the economic point of view, an actual sacrifice.

All Kellenberger's demonstrations—which we cannot sum up here—come to this general conclusion, that expanding productions (such as industry) present a big advantage over non-expanding productions (such as agriculture), and that, the more non-expanding a branch of production is, the less advisable is it to limit national production to this branch.

What modification does a non-proportional output bring to our theoretical conclusions?

There is no question of a modification, merely of a correction.

Indeed, if a branch of production works according to the law of increasing output, then, after the production of a certain quantity of goods, each unit of goods produced demands less effort and a lower production cost than the previous units

Therefore, in this case the production per workman, *i e.* the productivity of this branch, augments according to the total quantity produced

Therefore, for a certain branch of production, increasing output is also increasing productivity.

In the same way, decreasing output means decreasing productivity.

What are the consequences of these deductions?

In our theoretical scheme, criticising the theory of international

trade, we came to the conclusion that in all cases where $\frac{q}{q_1}$ is inferior to K direct production is preferable to the commercial solution (import).

But when the article Q is produced according to the law of decreasing output (the general case with agricultural goods), and the article Q^1 is produced according to the law of increasing output (the general case of industrial goods), then the coefficient q, which represents the diminished agricultural superiority, and the coefficient q_1, which represents the augmented industrial superiority, therefore the ratio $\frac{q}{q_1}$ decreases.

At the same time, the coefficient K, which represents the report between industrial productivity (which augments) and agricultural productivity (which diminishes), is increased

Therefore, if, according to the law of constant output, we have $\frac{q}{q_1} < K$, this condition is satisfied by the law of decreasing output.

The direct production of article Q^1 is much more advantageous than its importation

If now this article Q (which we have only conventionally—see par. 60—supposed to be an agricultural article) is produced according to the law of increasing output, and the article Q^1 (which we have equally conventionally supposed to be an industrial article) is produced according to the law of decreasing output, then q augments, q_1 decreases, and $\frac{q}{q_1}$ augments, while K decreases.

The condition $\frac{q}{q_1} < K$ chances to be no longer satisfied, and the commercial solution may outweigh direct production.

But this case is really exceptional, as it seldom happens that an agricultural article is produced with increasing output and that an industrial article is produced with decreasing output.

The general case is the one first examined

Thus this case does but confirm our conclusions.

APPENDIX III

ON THE INCREASE BY PROTECTION OF THE PURCHASING POWER OF NATIONS

AN argument never lacking in any free-trade demonstration is that protection, by favouring the existence of production branches with a smaller output than that of foreign branches, decreases the total production of the nation, therefore also its revenue, raising the prices for those protected products and decreasing purchasing power.

But the purchasing power of nations, playing a part in the world crisis following the war—as we showed in the discussion on the policy of Geneva—this anti-protectionist argument does not fail to produce a particular impression

We must therefore revert to this in two or three words

What happens if a protected industry of large productivity (a large intrinsic productivity) takes its rise in a country?

A number N of workmen and other producing agents are displaced towards this industry, after having left other industries and other branches of production which represent a smaller productivity.

Therefore, according to what we have so often shown, this displacement represents a rise in national production, therefore in national revenue, therefore in the purchasing power of the nation. We need not repeat this argument.

On the other hand, free-traders pretend that the dearness of protected products in a country is a cause of diminishing purchase power.

To this second argument we have not yet replied. This is what we intend to do now

It cannot be denied that internal dearness is not a cause of diminished purchasing power (as regards the articles which have become dearer), but the whole question is to know whether this diminution is greater, or not, than the rise in purchasing power caused by the rise of national revenue as a consequence of the progressive industrialisation of the country.

This comparison quickly leads us to categorical results.

Indeed, when the N productive agents are displaced towards the protected industry with larger productivity, the rise in national revenue is usually very high.

We showed that in all countries the average productivity of industries is twice or three times larger than the average productivity of agriculture.

But there are industries—namely, the ones which we recommend for protection—with a productivity five or ten times greater than the productivity of agriculture

Therefore a displacement of agricultural labourers towards industry represents a considerable multiplication of their productivity.

In the same proportion the purchasing power of other agents is multiplied (the purchasing power of persons outside the actual industry ' bankers and bank clerks, merchants and their assistants, forwarding agents, etc).

What is, from the point of view of this real increase of national revenue, the diminution of purchasing power caused by the high prices of protected goods ?

The augmentation of prices of goods, through protection, is generally 10–20%, rarely 40% This augmentation diminishes consumption (measured in quantity of goods) in a certain proportion. But this diminishing, which touches merely those goods, is not to be compared—according to the results of the abovementioned figures—to the so considerable augmentation of the nation's purchasing power (which, for the producing agents of those goods, is twice, four, and ten times greater than before).

We could reproduce here exact calculations which we have made on various branches of American industry. But we consider it unnecessary, especially since the final revenue from protected industries—historically verified—confirms our conclusions.

Indeed, industrial protectionist countries have a much larger purchasing power than agricultural countries. Protection, favouring industrialisation, does not diminish the total purchasing power of a nation, on the contrary, protection augments this power.

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